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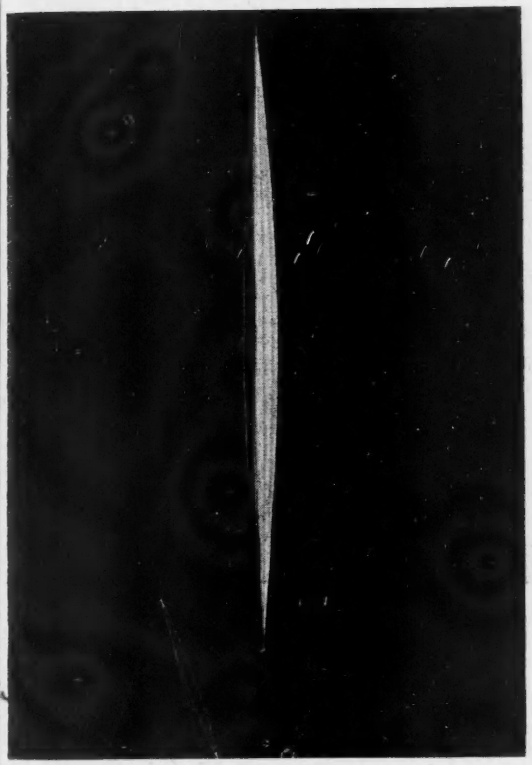
THIS WEEK'S NEWS



NIGHT VIEW of the winning design in the competition for a Vertical Feature for the South Bank Exhibition site, organised by the Festival of Britain, 1951. Powell and Moya, AA.R.I.B.A., architects. The assessors' awards in this competition and in that for a Restaurant are on page 42 and the designs are on pages 69-72.

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THE PRESIDENT of the R.I.B.A. is to be asked to appoint assessors to advise the Coventry Cathedral Reconstruction Committee upon the preparation of conditions, etc., for a proposed open competition for designs for the reconstruction of Coventry Cathedral. 34

DETAILS ARE GIVEN of appointments made by two local authorities, Essex C.C. and Newcastle-on-Tyne E.C., of architects in private practice to prepare designs for proposed buildings. 34

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SOME OF THE MORE IMPORTANT PRINCIPLES of acoustics to be applied in the design of concert halls were dealt with by Mr. Hope Bagenal in an address at the R.I.B.A. 73

CONCERN has been expressed by the A.B.T. at the recent report made to the Minister of Labour on "Present and Future Supply and Demand for Persons with Professional Qualifications in Architecture." 83

FAITH AND WORKS

1950 PROMISES to be a testing year for the building industry. Building and civil engineering work accounts for well over 1,000 millions of capital investment expenditure, and the cuts announced by the Government in the autumn mean that that figure has to be reduced by between eighty and ninety millions, or approximately 8 per cent. With an undiminished demand for building of all kinds—a demand, indeed, that stretches indefinitely into the future—there is a clear obligation on the building industry to extract every pennyworth of value from the money it is allowed to spend. We believe that the industry as a whole is alive to its duties and opportunities.

Building is fundamental to the economic recovery of the nation, and all parties concerned have their contribution to make—the client (who nowadays is so often the State) by making up his mind quickly and not changing it; the architect by increased efficiency in design and promptitude in the supply of working drawings; the contractor by adopting more economical methods of building, modern costing systems, and improved site organisation and management; suppliers and sub-contractors by keeping to schedule; and the operative by higher productivity through enthusiasm and incentive payments. It is encouraging to know that much progress has already been made along these lines. One hindrance to progress regrettably shows no tendency to reform—we refer to the multiplicity of Ministries and authorities to which projects must be submitted for approval. If only, as Mr. Michael Waterhouse suggested in his recent address to the R.I.B.A., these could be replaced by "one central determining body imbued with the power and desire to act and determine quickly," much professional manpower could be released for creative work. Besides exhorting others to greater efforts the Government should look to its own failings.

"More production at lower cost" must be the motto of the building industry, possibly for years to come. Much as we may regret it, there will probably have to be some modification in standards of building and accommodation. With commendable promptitude the Ministry of Education has already issued amending regulations suggesting economies in school building, designed to produce "more school places for every £1,000 spent" while maintaining proper educational standards. In housing it is unofficially estimated that a maximum saving of £100 on each 3-bedroom house is possible. On the basis of 200,000 houses a year, here is a saving of £20,000,000, which, at £1,600 per house, means another 12,500 houses a year. Economies must be sought in every kind of building if the best is to be made of the limitations forced upon the industry.

The willing co-operation of all is essential if higher productivity is to be achieved. There will have to be a tightening-up of the whole machinery of building and a readiness to adopt more economical methods and practices. In this connection we look forward with keen expectation to the reports of the Working Party for the building industry and of the Building Productivity Team which recently visited the United States; these could well mark a turning-point in British building economy. American conditions, of course, differ in many respects from our own, but when all allowances are made there is still reason to believe that we have something to learn from the Americans about speed, efficiency and the competitive spirit. Faith in our own native power of recovery remains undiminished; but only Faith and Works in close co-operation will carry us through.

SOUTH BANK NOCTURNE. A short-distance view from County Hall showing the crescent of 32-ft. concrete fins for the Dome of Discovery of the Festival of Britain. With a diameter of 365 ft., the Dome (designed by Ralph Tubbs, A.R.I.B.A.) will be covered with 3½ acres of aluminium and the concrete fins will support a gallery from which visitors will be able to look down on the other exhibits.

NOTES AND NEWS

Festival of Britain

THE Festival of Britain has had a bad spell lately, in so far as publicity is concerned. The best part of a week's work has been lost on the Concert Hall construction through a labour dispute (now settled), while Professor A. E. Richardson, R.A., on January 3, told the Incorporated Accountants that the "fun-fair" being made on the South Bank "will not be ready in time. As a member of the Royal Fine Art Commission, I can let that secret out," he is reported as saying. The Professor added that "a danger spot was being made," and that if more than 20,000 people visited the exhibition [at the same time] there might be a disaster; the area was too small to contain such numbers.

There are points here which require an official answer. At the time of going to Press this has not been officially forthcoming. The South Bank is certainly not intended as a "fun-fair," but that such an impression should still be abroad indicates that the Festival's public relations work is not all it might be. Whether the winning design for the Vertical Feature will do much—in spite of its ingenuity—to restore a truer picture of the purpose of the South Bank Exhibition, we shall see. The other charges—that the South Bank preparations are behind time, and that the small size of the area constitutes "a danger spot"—are certainly matters on which we should have expected a speedy official response. Too much money and our national credit are involved for misconceptions to gain credence.

Coventry Cathedral Competition.

THE PRESIDENT of the R.I.B.A. is to be asked to appoint a jury of three assessors to advise the Coventry Cathedral Reconstruction Committee upon the preparation of conditions and instructions to competing architects, in a proposed open competition for designs for the reconstruction of Coventry Cathedral. In the Harlech Report it was stated that an open competition was the only satisfactory means of selecting the architect, and that the competition should include the layout of the ground and the disposition of the chapel of unity and the Christian service centre in relation to the cathedral, as well as designs for all the buildings.

Lay Architectural Wisdom.

MEMBERS and students of the Architectural Association who were unable to attend the A.A. on Wednesday of last week missed one of the wittiest and most thoughtful addresses ever heard at Bedford-square. Mr. I. C. Perrott, M.C., taking as his title "The Worm Turns," dealt uncompromisingly yet firmly with architecture and architects from the vantage point of a man who has spent over 20 years at the Press table of the A.A. and R.I.B.A., and has recorded over five and a half million words spoken on the subject. His address, whose delivery might serve as a model, had only one fault—the wit too often disguised the hard sense and wisdom of this *doyen* of shorthand reporters, now head of a firm known (it is mentioned in *Martin Chuzzlewit*) to that other great reporter, Charles Dickens.

Mr. Perrott's paper is printed elsewhere in this issue, and we commend it to the serious attention of those who believe that part of the architect's job in life is to educate the lay public. Mr. Perrott's modesty, fortunately on a par with his professional ability, enabled him to withstand the remarkable and deserved barrage of tributes that was directed at him by journalists and others present. Probably the form of showing gratitude that would best appeal to him would be a careful study of his paper by architects and town planners who, by so doing and in the phraseology of another profession, "will hear something to their advantage."

School Building in Essex and Newcastle.

TO ASSIST the County Architect (Mr. H. Conolly, F.R.I.B.A.), Essex County Council have agreed to engage the following firms of private architects to design new school and other buildings appearing in the 1950 programme which is estimated to cost over £2m.:—

George Fairweather and R. Furneaux Jordan; A. R. Dannatt and Son (Chelms-

ford); J. E. K. Harrison (Westwood, Sons and Harrison); Hiscock and Duncan Scott (Guildford); Johns and Slater (Ipswich); Gerald Lacoste; Hubert and Martin Lidbetter; Gerald Shenstone and Partners; J. M. Sheppard and Partners; Richard Sheppard and Partners; J. Moore Simpson; and Tooley and Foster (Buckhurst Hill). The Council and their Architect are to be congratulated on this step, the advantages of which have often been put forward in our columns.

Architects have been appointed as follows by the Newcastle-on-Tyne E.C. for three new schools:—G. H. Gray, Camden-street, North Shields (Ravenswood-road primary school); P. L. Browne, Son and Harding, Pearl-buildings, Northumberland-street, Newcastle (Montagu primary school); and C. S. Errington, 46, Grainger-street, Newcastle (Benton Park primary school).

Reducing School Building Costs.

THE Government's economy cuts on education are having their repercussions in Lancashire, and Mr. G. Noel Hill, Lancashire County Architect, says that economies must be effected in school buildings, and many projects now in an advanced stage of preparation must be revised.

The technical staff is still 25 per cent. under strength, but work brought up to the tender stage was about £2,750,000—nearly £1,750,000 more than last year.

As a result of research, a system of standard planning units for primary schools, day nurseries, child welfare centres, homes for children, hostels for the old and for ambulance stations has been devised. Under the system, it is believed that 20 primary schools could be undertaken in a single year by four architects.

Sketch plans for four secondary schools, Mr. Hill announces, will have to be scrapped by reason of the demand for economy, and a new start will have to be made. It has been suggested that economies could be effected by modifying the sanitary system and cutting down floor space.

Grantham Architect's Employment.

AFTER discussion in committee, Grantham Town Council has, we learn, approved a suggestion that the Housing Architect, Mr. G. H. Dickinson, L.R.I.B.A., be employed by the council as an architect in private practice to complete outstanding work in settlement of contracts already completed when he relinquishes his Corporation appointment.

The Housing Committee also recommended, and the council approved, that the housing architect's department should be terminated as a separate department when Mr. Dickinson ceases to hold his present appointment.

This will involve the borough surveyor (Mr. J. Livesey) taking charge, either temporarily or permanently, of work previously done by the architect's department, and the committee considered two possible alternatives—that the architect's department should be amalgamated with the borough surveyor's department, and the surveyor should be responsible for both the corporation's engineering and architectural work; or that the employment of a full-time architectural staff by the corporation should be discontinued, and that the council should engage an architect in private practice for future architectural work.

East Cowes Castle to go.

THE news, contained in an advertisement printed in our last issue, that contractors are invited to tender for the demolition of East Cowes Castle means that one of John Nash's most charming works is to go. It is proposed to demolish the Castle to the ground level, leaving a clear site for subsequent rebuilding operations.

Lecture Tour in Belgium.

PROFESSOR GORDON STEPHENSON, Professor of Civic Design at the University of Liverpool, and prior to 1948 chief planning officer at the Ministry of Town and Country Planning, departed for Belgium on January 8 to lecture for the British Council on planning and reconstruction in Great Britain.

Speaking in French, he will lead a colloquium at the Institut Supériéur et International d'Urbanisme Appliqué in Brussels and he will also lecture in Liege and Antwerp.

His lecture will be a broad survey of the planning and reconstruction problems facing this country and of the machinery devised for their solution.

The Monte Carlo Rally.

A BUILDER and a quantity surveyor are taking part in this year's Monte Carlo Rally at the end of this month. The builder is Mr. P. Fotheringham Parker, chairman of Patman and Fotheringham, Ltd., and a member of the London Master Builders' Association; the quantity surveyor is Mr. H. S. Shears, of Taylor and Smith. They are driving in the Hillman "Minx" team starting from Glasgow. Mrs. Fotheringham Parker is also taking part in the rally: she is driving in the Standard "Vanguard" team.

Mr. Fotheringham Parker is well known in the motor-racing world and has many achievements to his credit, his latest being last September when he finished second in the Wakefield Trophy International Race in Ireland and also made the fastest lap. In the "Brighton Run" in November, known to the people as the "Old Crocks' Race," both took part, Mr. Fotheringham Parker driving an 1899 "Century" and Mrs. Fotheringham Parker a 1903 Renault. Both finished, and so won awards.

Bradford City Architect.

THE CITY OF BRADFORD are inviting applications from members of the R.I.B.A. for the position of City Architect, at a salary of £1,600 per annum. Details appear in our advertisement columns.

Camber Castle Coastal Area.

A PART of the coastal area around Camber Castle, near Rye, which was erected by King Henry VIII as a coastal defence after the sea had receded from Winchelsea, has been preserved by a decision of the Minister of Town and Country Planning.

The value of this area adjacent to the main shingle deposits of Dungeness lies chiefly in the fact that the ridges serve as an historic example of ancient coastal accretion. These ridges provide natural evidence of the physical evolution of the land and are of great value in the study of coast-lines and weather history.

Professional Announcements.

MR. T. J. RUSHTON, F.R.I.B.A., partner of the late Sir Charles Nicholson, Bt., F.R.I.B.A., M.A., has taken into partnership his son, Mr. H. T. Rushton, L.R.I.B.A. The practice will continue under the style of Nicholson and Rushton, 2, New-square, Lincoln's Inn, London, W.C.2. (Holborn 6228.)

MR. S. P. JORDAN, A.R.I.B.A., M.S.I.A., has removed from 1, Thurloe-street, S.W.7. All professional communications and trade catalogues should be addressed in future to 7, Hobart-place, London, S.W.1 (tel.: Sloane 6127), where he is in practice on his own account and as a member of Gaby Schreiber & Associates.

MR. L. J. BROOKS, F.I.A.S., A.I.Q.S., quantity surveyor, of "Outwood," Hever, Edenbridge, Kent, wishes to announce that he has now transferred his office to No. 7, Mount Ephraim-road, Tunbridge Wells, Kent (Tunbridge Wells 1068), where he will be pleased to receive current catalogues, price lists, etc.

COMING EVENTS

Tuesday, January 17.

R.I.C.S. (AGRICULTURAL SECTION). — Annual Conference. R.I.C.S., 12, Great George-street, London, S.W.1. 11.15 a.m.

MINISTRY OF WORKS.—Opening of M.O.W. Prestressed Concrete Exhibition, by the Rt. Hon. C. W. Key, M.P. Marks and Spencer's, Oldham-street, Manchester. 11 a.m.

Wednesday, January 18.

BUILDING INDUSTRIES LUNCHEON CLUB.—"The Conservative Housing Policy for the forthcoming Election," by Mr. J. Baker White, Unionist M.P. for Canterbury. Hungaria Restaurant, Banqueting Room, Lower Regent-street. 12.30 p.m.

THE REINFORCED CONCRETE ASSOCIATION.—"Concreting Plant," by Mr. W. G. Furlonger. The Institution of Structural Engineers, 11, Upper Belgrave-street, London, S.W.1. 6 p.m.

Thursday, January 19.

L.M.B.A.—Annual General Meeting. Park Lane Hotel. 1 p.m.

SOCIETY OF CHEMICAL INDUSTRY.—"Timber as a Flooring Material," by Mr. F. H. Armstrong, of D.S.I.R. 11, Upper Belgrave-street, S.W.1. 6 p.m.

Friday, January 20.

SOUTHERN COUNTIES FEDERATION OF BUILDING TRADES EMPLOYERS.—Luncheon and A.G.M. Connaught Rooms, Great Queen-street, W.C.2. 1 p.m.

INSTITUTE OF QUANTITY SURVEYORS.—Annual dinner and dance. Park Lane Hotel, Piccadilly. 6 p.m.

FROM "THE BUILDER" OF 1850

Saturday, January 12, 1850.

In 1615, he [Inigo Jones] returned to become surveyor of the works to the King.

"His pay commenced from the 1st of October in that year; at the rate of eight shillings a day for his entertainment, eighty pounds per annum for his 'recompense of availes,' and two shillings and eightpence a day for his riding and travelling charges. His riding expenses were subsequently raised, but the fees I have quoted were the fees of the office at the period of his appointment. He had other emoluments. The warrant to the Master of the Wardrobe, on his first appointment, dated 16 March, 1615-16, directs that he should receive 'five yards of broad cloth for a gown, at twenty-six shillings and eightpence the yard; one fur of budge, for the same gown, price four pounds; four yards and a half of baize, to line the same, at five shillings the yard; for furring the same gown, ten shillings; and for making the same, ten shillings.' The cost of the livery was therefore 12*l.* 15s. 10d.; and this sum was paid to him yearly, as surveyor of the works, by the Master of the Wardrobe."—*From an editorial review of a memoir of Inigo Jones, written by Mr. Cunningham, and published by the Shakspeare Society.*

New Year Features

A few reproductions of the drawing of "The Palace of Westminster," by Mr. H. Frank Hoar, included with this issue, have been made. These, unfolded, without text and suitable for framing, can be obtained, price 2s. 0d., post free, from the Publisher, *The Builder*, The Builder House, Catherine-street, W.C.2.

Additional copies of *The Builder* Map of the County of London, giving names and addresses of District Surveyors with reference numbers to map, may also be obtained, price 1s. 6d., post free, from the same address.

Mr. Aneurin Bevan (Minister of Health), Mr. Michael Waterhouse, P.R.I.B.A., and Mr. Norman Longley, President, National Federation, seen at the recent Building Exhibition. They are among those who express their views below on :

The Building Outlook for 1950

Message from the Rt. Hon. Aneurin Bevan, M.P., Minister of Health

I AM very pleased to be able once again to send a New Year message to readers of *The Builder*. Last year was one of steady progress, bringing the number of additional homes provided since the war to over a million, of which more than 600,000 were permanent houses and flats. We must continue to build as many houses as possible and of varied types to meet the differing social needs.

The year ahead may be one of great economic strain, but I am sure the building industry will maintain its high tradition of service to the community.

Aneurin Bevan

From the Rt. Hon. Charles W. Key, M.P., Minister of Works

I AM pleased to send my best wishes for the New Year to all readers of *The Builder* and to pay a tribute to the achievements of the industry during the past year. A vast amount of work has been done, and in spite of the fact that most of the building materials industries have greatly increased their production compared with 1948, the pressure of demand for materials has been heavy. I think that this indicates that there has been a significant increase in production in the building industry.

To many of you the prospects for 1950 will not seem so bright in view of the reduction in the capital investment programme that we have had to make as a contribution towards solving the serious economic problems that face the country. But the reduction will be achieved, not by stopping work in progress but by a gradual slowing down of the rate of work authorised, so that by the end of 1950 a new rate will be reached which will be only slightly below that of 1948.

For the building industry as a whole, the effect of this reduction in building activity should not be over-emphasised. In particular, I hope that this temporary set-back will not deter employers from engaging and training apprentices in sufficient numbers to maintain the industry's force of skilled craftsmen.

In present circumstances the need for higher productivity in all our industries becomes all the greater in order to surmount our economic difficulties. The building industry can play a vital part by providing both capital equipment and housing for our people as efficiently as possible. We must be alive to new ideas and new possibilities, and I am sure that you will find plenty of these in two important reports which will shortly be available—the report of the Building Industry Working Party and the report of the Productivity Mission to America. These will constitute a double challenge to the industry, and I am confident that it will be quickly taken up by everyone concerned. In this way we can play our full part in meeting the economic challenge to the country as a whole, with whose prosperity the fortunes of the building industry are so closely involved.

Good luck to you all during the coming year.

Charles Key

From the Rt. Hon. Lewis Silkin, M.P., Minister of Town and Country Planning.

IN conveying to your readers my best wishes for 1950 I should like to take the opportunity of emphasising how much the rebuilding of our old towns and the building of our new ones depend on the skill and efficiency of the building industry. This achievement will be measured not only by its output but also by its success in keeping down costs. The New Towns building programme is now getting into its stride, but it can only adequately serve the purpose for which it is intended if these costs are kept to the minimum. Similarly, with the rebuilding of the blitzed towns and the slums, the plans are there, but if the people are to see them come about, the building industry must find ways of realising them more cheaply.

I am sure that the industry will meet this problem triumphantly.

A very good New Year to you all.

LEWIS SILKIN.

From the President of the Royal Academy.

I HAVE been asked to send a New Year message to you, the readers of *The Builder*. It seems reasonable in your Editor to apply to the newly elected President of the Royal Academy whose members are either painters, sculptors or architects. Buildings are the necessary background for paintings, sculpture is frequently used within or without, and architects design them. It is builders who erect them.

Painting these days is almost entirely occupied with the production of easel pictures which are not intended to remain in any certain environment. Except in small rooms, good decoration is rarely achieved by taking these and fixing them on the wall, and this is so mainly because the easel picture is not sternly conditioned by the demands either of an architect or his architecture.

But if any of the many young painters are anxious to be " useable " in modern buildings, they must be ready to give up

that dangerously unlimited freedom and learn to conform to or collaborate with the architect's plan.

The private patron is dying out, and the future employment seems likely to lie in public building, and there the architect will be paramount. At any rate a good architect does give his building that sense of meaning which should dictate and inspire the painter and sculptor to collaborate. It would be grand if once again as in the past the young sculptors and painters were given plenty of opportunity to find new solutions and to discover the advantages and satisfaction of working within limitations.

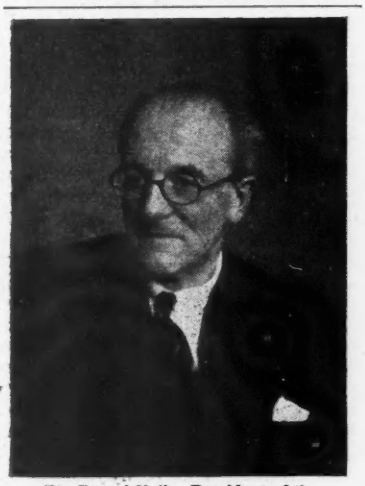
Notice that this "message" is mainly to painters and sculptors, suggesting that they learn to collaborate with the architect. But since nothing can be done without buildings it is almost as directly a "message" to the building industry. It is also only too obvious that at the present time the building trade is faced with a post-war housing programme still begirt with distressing difficulties. It must be peculiarly aggravating to be busied with so much temporary and provisional construction. But we must not give up hope. It may seem that I am describing an intangible day-dream, but it will come.

Good luck to us all.

GERALD KELLY.

From the President, R.I.B.A.

MY first duty, and pleasure, is to record my gratitude to all those who have, as so often before, responded so willingly and generously to my Christmas appeal on behalf of the Architects' Benevolent Society. Contributions have come from all sections of the building industry to this fund. At the same time, however, I have a deep regret, which is shared by my Council, that the number of regular subscribers to the Society is so small. Out of 15,144 architects on the Register there are only 1,016 regular subscribers. Among the odd 14,000 there are some who, subscribing through their local Allied Societies, are anonymous, and others who respond to the Christmas appeal. But the proportion of regular donors to the profession as a whole is lamentably small, and it is true to say that the relief of distress which, even in spite of State benefits, is very acute, and very frequent, depends upon that very generous and relatively small minority to whom I tender on behalf of their beneficiaries our gratitude.



Sir Gerald Kelly, President of the Royal Academy.

In the New Year both the industry and the nation as a whole have much to look forward to. The General Election overshadows all. Apart from that we await with extreme interest two reports—that of the Working Party on the Building Industry, and that of the team sent to the U.S.A. under the sponsorship of the Anglo-American Council on Productivity.

It would be fantastic to expect that either should revolutionise our industry. Indeed, there are many who hold the opinion that granted suitable conditions, adequate materials and labour, and the abolition of unnecessary interference and restrictions, the professions and the industry are themselves capable of fulfilling their optimum contribution to the nation.

We do, however, look to these reports for help and guidance, and it is to be hoped that all the benefits that can be derived from them will be seized in the spirit of willing, ready acceptance.

It may be recalled that one of the most salient messages from the U.S.A. team on its return was to the effect that, granted a spirit of initiative and permitted a true incentive in all ranks of the industry, it was convinced that Britain could equal America in efficiency provided we did not allow ourselves to be numbed into mute acceptance of present conditions and practices as inevitable. This spirit of initiative, I am convinced, can only be attained and sustained by intense individual personal effort, work and example. It is only thus that this country's difficulties will be overcome. That we shall succeed I am sure, and for my final thought of the New Year message I quote you the words of Lord Jowitt, the Lord Chancellor:

"I have, myself, a profound belief that these problems will ultimately be solved only by the rather old-fashioned virtues in the people. I believe that the old-fashioned virtues of thrift, hard work, energy, determination, and of facing up to realities will pull this country through."

MICHAEL WATERHOUSE.

From the Chairman of the Quantity Surveyors' Committee, R.I.C.S.

THE feeling in the building industry at this time must be one of grave concern. There has been a serious set-back in the gradual progress towards an unrestricted industry to which we looked forward a year ago. Unfortunately, the industry is by its nature heavily affected by prevalent scarcities and economic difficulties. It is, however, possible to look forward to a year during which the foundations for future prosperity may be laid.

During this year two reports, both of great interest to the industry, will be published—the report of the Working Party and that of the Building Productivity Team. If, as we must all hope, these reports contain constructive criticism of the building industry and suggestions which can, under present conditions, be adopted, this year should be one of preparation for greater efficiency, so that when circumstances make a full programme possible the industry will be ready to take full advantage and satisfy all the demands made on it. T. CUTHBERTSON HILL.

From the President of the I.A.A.S.

THE satisfaction that springs from achievement and a sense of work well done is the wish for 1950 that I would like to express, through the columns of *The Builder*, to all engaged in the great industry of building. I realise, however, that the opportunity for the full employment of the creative abilities and technical skill of architects, engineers and surveyors, and of craftsmanship of the highest order, comes all too rarely nowadays. The building industry can work with complete efficiency and to the maximum of its potential only when the full range of building is again restored and all types of buildings can be erected in economical numerical proportions. Stringent restrictions, higher prices and reduced labour output are bound to be reflected both in the appearance of our new buildings and in their cost—a truth that should be appreciated by the Government in the determining of policy, and also by those who criticise the quality, quantity and cost of buildings erected under existing conditions.

We cannot, of course, for the moment, dispense with all controls; housing remains the hard long-term problem, and until the back of this is broken there can be no resumption of the full range of building which will permit of a real renaissance of architecture. Few of us, however, can be fully satisfied with the progress that is being made. The industry itself is the subject of investigation by a Working Party, and a committee has reported on the cost of house-building, but I would like to see an inquiry into the working of controls, and into the handling of the housing programme by local authorities—especially now that the competition of private house building has been virtually eliminated. Many municipal authorities, to my own knowledge, have proceeded with their housing schemes in a most efficient and satisfactory manner, but in some cases I feel that in tackling the housing problem we are not making full use of all our resources—particularly of experience and enterprise. In my view the Ministry responsible should provide itself with facilities for regular consultation with representatives of all sections of the industry—architects, surveyors, contractors, operatives and manufacturers of materials.

Nationalisation of the industry is not, of course, an immediate political

issue, but the danger is nevertheless real, and will best be combated, as I see it, by the industry itself doing all in its power to increase efficiency. In this, I believe that the building professions can play a leading part by the greatest possible co-operation, both on the job and in their counsels.

CHAS. H. TAYLOR.

From the President, N.F.B.T.E.

WITH the dawn of the New Year and the second half of the twentieth century we are all trying to look ahead just a little further than usual. Despite two world wars, there can be no doubt that the nation's standard of living accommodation has advanced steadily during the past 50 years. Given peace, modern techniques should enable us to improve these standards more rapidly in the half-century ahead. None of us can gain any satisfaction from his work unless he has faith in the future. We in the building industry are encouraged by a proud record of centuries to face the future with confidence. There is uncertainty to-day but, as in the past, this should make us more eager to grapple with the problems which confront us.

In my Christmas message to the industry I referred to it as a large army. We are an army, but it is as *individuals* that we really count. We are not a regimented herd but a vast number of free individuals by whose collective efforts the amount of progress we achieve will be determined. With the country in its present state, we, as a key industry, have an important role to fill. Difficulties there undoubtedly are for each one of us in his own sphere.

Let us pledge ourselves to help each other and, by our common effort, to make the greatest contribution possible to the well-being of the community. In this way 1950 can be the happy year I wish every reader of *The Builder*.

NORMAN LONGLEY.

From the General Secretary, N.F.B.T.O.

I AM glad, once again, to be invited to send a New Year's message through the columns of *The Builder*. From the point of view of the building industry we have just passed through a busy year; my hope is that this "busyness" will continue throughout 1950. I think it will be agreed generally that there is a little justification for a certain amount of apprehension at the official announcement of the proposed cuts in the Government's building programme, but I sincerely trust that the apprehension will, in the event, prove groundless. It will, if the Government bears in mind past experience, and it will if the importance of the building industry in the country's economy is fully realised. I think, or at least I hope, that all those responsible for the welfare of the country believe that economic progress cannot be brought about by depressing one of its major industries. True, the building industry is not an "export" one, but complete dependence or reliance on the export industries is not sufficient to ensure complete economic recovery. Progress in housing is vitally important and so is the building of industrial and commercial establishments which constitute an important issue for our complete rehabilitation.

The operatives firmly believe in the doctrine of full employment, both as a short-term and a long-term policy.

I wish *The Builder* and all its readers a prosperous New Year.

R. COPPOCK.

From the President of the Building Industries National Council.

THE past year's working of the building industry, judged by rational standards, has, on the whole, proved itself to be progressive. It has weathered the vicissitudes of building control by licence, materials in short supply, curtailment of capital investment, devaluation of the pound sterling in relation to the American dollar and the detailed vagaries of financial and other policies far more successfully than could at the relevant times have been anticipated. This success in an atmosphere of day-to-day uncertainty is undoubtedly due to the strength of the organised elements within the industry itself. Good industrial statesmanship has been exercised, particularly in the relationships with Government as such and with Government Departments, the effect of which is reflected in the fact that employment of all dependent classes and resources has experienced no wide fluctuations, and as a result of which the physical assets of the nation as a whole have been immensely enhanced, strengthened and stabilised over the year.

Like good historians, we must anchor our future hope to our experience of the past. There can be no doubt in my view that if the industry maintains the present high standard of statesmanship among its leaders, linked to its machinery of consultation with Government, and above all maintains, as it no doubt will, its exceptionally effective machinery throughout the country of joint negotiations and conciliation on industrial matters, the coming year will prove even more progressive.

I find that every year as it passes leaves the idea more firmly embedded in the public mind that the measure of building achievement is the real test of economic progress. From that thought we can, I believe, take great encouragement.

W. H. FORSDIKE.

From the Chairman of the Building Apprenticeship and Training Council.

IN 1950, for reasons which are well known, the building industry must face a reduction in its share of the capital investment programme.

This will undoubtedly increase the difficulties of recruitment for the industry. The bright hopes with which we embarked upon 1949 have not been fully realised, but the improvement in the number of apprentices entering the industry has been encouraging. There have also been noteworthy developments in the field of higher education. I mention in particular the special courses for training foremen, the reorganisation of the Diploma and National Certificate examinations, and the broadening support by the industry of the scholarship scheme sponsored by the Building Apprenticeship Council.

The immediate outlook for the industry is by no means free from uncertainty, but the long-term prospects are excellent. There is an enormous amount of building work to be done, and as soon as the financial situation improves the industry will be working full steam ahead.

To all responsible for recruitment and training I would say: Let us strive in 1950 to expand recruitment and to prepare for the good time so that when it comes we shall have a supply of trained craftsmen sufficient to meet all the needs of the industry.

(Sir) GEORGE GATER.

From the President of the Federation of Associations of Specialists and Sub-contractors.

THE building industry might six months ago have reasonably looked forward to the end of the year with confidence, in the belief that 1949 would prove to have been the best of the post-war years. These hopes have, however, been dashed, and economic difficulties have compelled the introduction of measures designed to take us back approximately to the position in 1948.

I think, however, we must avoid being too tragic about this. Disappointment is natural, but still we should remember that this setback has not been caused by any failure of the industry itself but by outside conditions over which we have no control. Such outside conditions are changing all the time, sometimes for the better—though it may be hard to believe—as well as for the worse. We know, therefore, that with our industry in a healthy state we shall be able again to make progress directly the opportunity comes.

Moreover, one of the characteristics of the industry is that it has no rigid structure but a great deal of the spirit of enterprise. If for the moment one avenue of advance is blocked, I do not see any of the firms with which I come in contact sitting down and doing nothing. There are other fields, such as export, which are as yet comparatively untouched by us.

There have been several occasions since the war when those who are easily discouraged have foretold disaster. I believe we shall emerge from this latest chastening as triumphantly as we have several times before, and I am confident that the members of my Federation as well as other sections of the building industry will follow me in refusing to be depressed and in a determination to have the happy and prosperous New Year which I wish for them.

W. R. COWEN.

SIR WILLIAM TITE, M.P.

His Life and Work

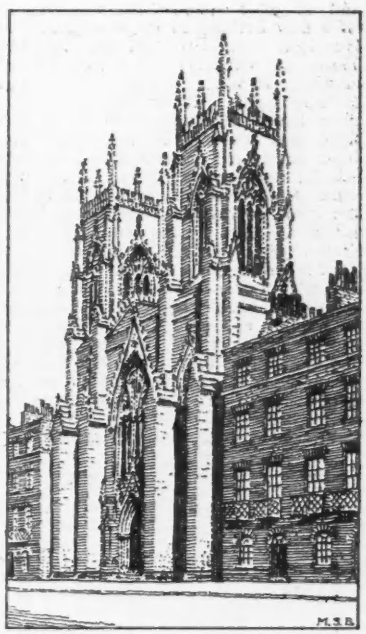
By MARTIN S. BRIGGS, F.R.I.B.A.

TO most architects, William Tite's name is familiar by reason of his bequest "to promote the study of Italian architecture"; to many he will be known as a President of the R.I.B.A. for five sessions (a record only equalled by Sir Percy Thomas); and some will remember that he was the designer of the Royal Exchange in London. He had a spectacularly successful career, left an enormous fortune, and lived a crowded life of professional and public activity. Yet, in spite of all this solid achievement, due almost entirely to his personal qualities of ambition, ability and terrific energy, the story of his life has never been written, and there is no example of his work among the fine collection of drawings in the R.I.B.A. library. Another obstacle to the present attempt to fill, in some measure, this important lacuna in our annals is the scarcity of personal impressions left by contemporaries and a consequent lack of the human and intimate details generally available to enliven the biographies of famous men.

Born in February, 1798, in the parish of St. Bartholomew the Great, in the City of London, he was the son of Arthur Tite, a Russia merchant of considerable means, and of Anne, daughter of John Elgie. His father lived on his business premises, as was customary among merchants of that day, but the house has long since been pulled down. The boy received his early education at day-schools, in Tower-street and afterwards at Hackney, where he is said to have been "distinguished as a very intelligent, energetic lad," remarkable for his penmanship.[1] At the age of 14 he was articled for six years to David Laing (1774-1856), who had himself been a pupil of Sir John Soane, and was an architect of sufficient eminence to warrant his inclusion in the select pages of the *Dictionary of National Biography*.

While Tite was in his office, Laing built the Custom House (1813-17), and that imposing monument still stands, though severely damaged by bombing in the second World War. "He pursued his professional studies with the greatest ardour, and acquired what was, at that time, rare knowledge and skill as a Gothic architect."[2] In 1817 or 1818 he attended Soane's lectures on architecture at the Royal Academy. Some 30 years later, at two meetings of the R.I.B.A. in November, 1846, and April, 1848, he produced his own manuscript notes of those lectures, supplementing them by an exhibition of Soane's celebrated lecture-diagrams borrowed for the occasion from the Soane Museum. His comments on the lectures were critical, and, for the most part, highly appreciative; but it is also worth noting here that Tite was apparently reading a verbatim report of the lectures made by himself—long before shorthand had come into common use—and that he ascribed their date to 1817. Reference to the actual records of the Royal Academy Schools, however, gives the following result: "William Tite, admitted 8 July 1818, profession architect, age 20." His memory may have been at fault, or he may have attended lectures in 1817 as an outsider, not enrolling as a student until 1818. The records of the Royal Academy do not give any date for the termination of his attendance. At all events, he admits that he derived great benefit and inspiration from Soane, as one would expect. It is regrettable that the R. I. B. A. library possesses no printed or even manuscript copy of Tite's two papers on Soane's lectures, which one would naturally hope to find in its *Transactions;* but long reports in *The Builder* and its leading articles[3] enable one to form a fair idea of their content.

From 1817 to 1820 he assisted Laing in the rebuilding of the City church of St. Dunstan - in - the - East (destined to be badly damaged in the air raids of September, 1940) in late Gothic style. According to one authority, this work was "mainly carried out by him" in spite of his youth; and in 1821, as "assistant surveyor of the parish, he received a vote of thanks from the Vestry for the zeal and ability evinced in the restoration of the church."[4] At some period earlier in his career, possibly while still with Laing, possibly a few years later, the authority just quoted states that "he had cultivated his mind and improved his taste by foreign travel; and, after the usual course of study abroad, he returned to follow his profession in good earnest." Nothing is said of the date of this tour, or whether it included a visit to Italy, and none of the other authorities makes mention of it.



REGENT SQUARE PRESBYTERIAN CHURCH AS IT APPEARED 50 YEARS AGO

Sir William Tite, M.P., from a portrait in the possession of the R.I.B.A.

Early Competition Designs.

It is certain, however, that he began to submit designs in competition before he left Laing, for there are definite statements that he competed unsuccessfully in 1819 for St. Luke's Church, Chelsea (won by James Savage with a Gothic design); in 1822 for the rebuilding of London Bridge (won by John Rennie the younger); and in 1825 for the restoration of St. Saviour's, Southwark (now Southwark Cathedral). None of the obituary notices gives the date when he started independent practice, though there is documentary evidence[5] that he occupied an office in Jewry-street, off Aldgate, in 1824, the year when he won two competitions, now to be described.

The first of these, by a matter of months only, was the Presbyterian Church in Regent-square, London, near King's Cross Station. A National Scottish Church for Caledonians resident in London had already been projected when the Rev. Edward Irving (1792-1834), famous equally for his good looks and his rhetorical power, became minister in 1822 of a small congregation in Hatton Garden. Here his vigorous attacks upon the "idolatries" of "the votaries of fashion, of literature, of sentiment, of policy and of rank," as he forcefully expressed it himself, drew such a gathering of rich, influential

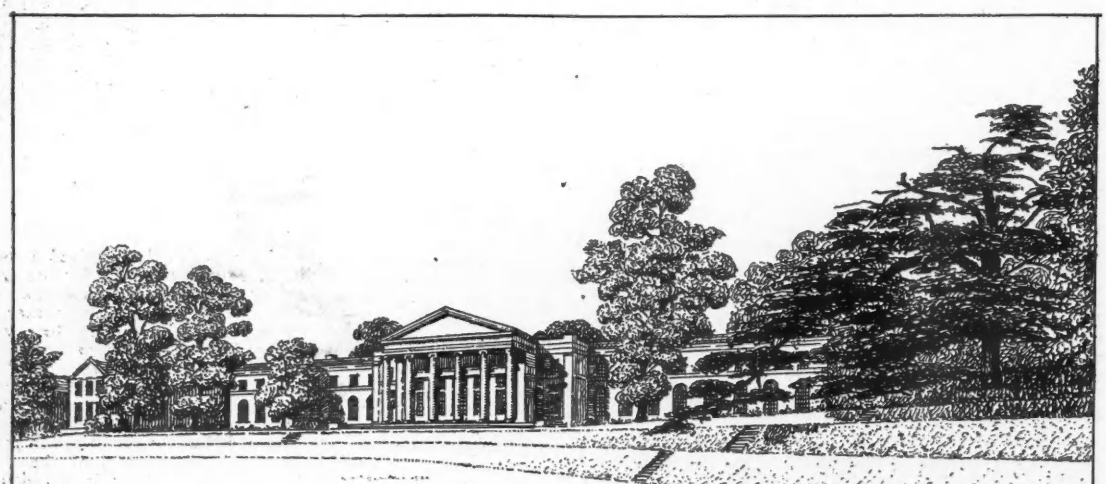
[1] Obituary notice in *The Builder*, xxxi, 337 (1873).
[2] Ibid.
[3] *The Builder*, iv, 577 (1846); and vi, 193 (1848).
[4] *The Builder*, xxxi, 337.
[5] Minute Book of Mill Hill School, May, 1824.

and delighted victims that the venture of a new building in Regent-square was launched. An advertisement in *The Times* of February 27, 1824, invited architects to submit designs for a church to seat 1,800. Among the instructions then issued to competitors there can have been no stipulation as to style, because the Committee ultimately selected two designs — one Gothic, the other Italian—which proved to be by the same architect! Quoting the published history of the church: "The Gothic plan was finally approved, but conditionally, the estimated cost being £12,000. There seems, however, to have been considerable discussion, divergence of opinion and consequent delay, as to the adequacy of the design selected by the Committee to realise fully the idea of a National Scotch Church in the Metropolis . . . so the much nobler and more costly design, the third in the competition [by Tite] was accepted. . . . It resulted in a heavily encumbered building and much future embarrassment and anxiety,"[5] the outlay involved (including £1,500 for the site) being £21,000.

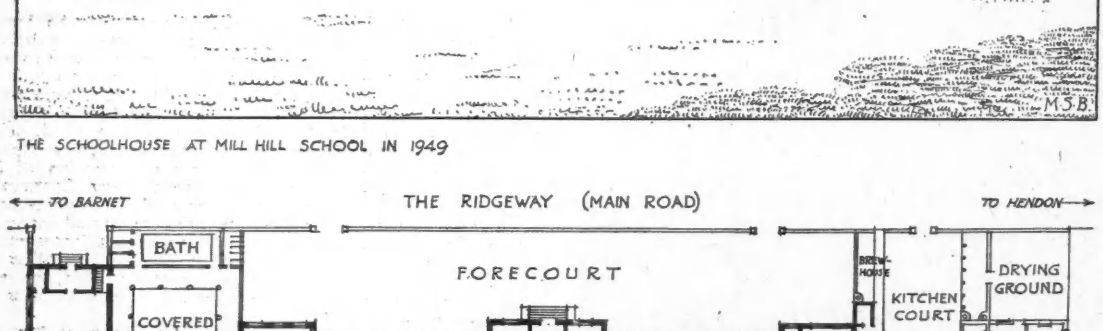
The foundation stone was laid on July 1, 1824,† quick work, but two very severe winters supervened and the church was not opened for worship till May 11, 1827, the ceremony being followed by "a sumptuous dinner at the Freemasons' Tavern, Old Queen-street."[7] The building was drastically altered internally in 1860, and a new window over the pulpit was inserted in 1873, but that feature complied with Tite's original intentions, and the main fabric of the church must be much as Tite left it, though it was badly blasted by a rocket near the end of the recent war, and is at present disused pending its restoration. Internally it is wide and aisleless, with enormous galleries supported on incredibly slender iron pillars, widely spaced. Externally, the main (north) front to Regent-square has two square towers after the style of the west front of York Minster, towers being needed to create an effect of emphasis in the long row of comparatively tall dwelling-houses. Those houses west of it having now been removed, the stark brick flank elevation is visible, with high two-light windows between massive brick buttresses. The north front as a whole, though its buttresses are clumsy, is a most competent exercise in neo-Gothic at the very beginning of the Gothic Revival, and the more remarkable because Tite, although he did produce a few more Gothic designs—as we shall see — became a protagonist of Italian Renaissance architecture.[8]

[5] J. Hair, *Regent-square: Eighty Years of a London Congregation* (1898), pp. 49-51.
† *Ibid*, 71, 349.
[7] *Ibid*, 333.

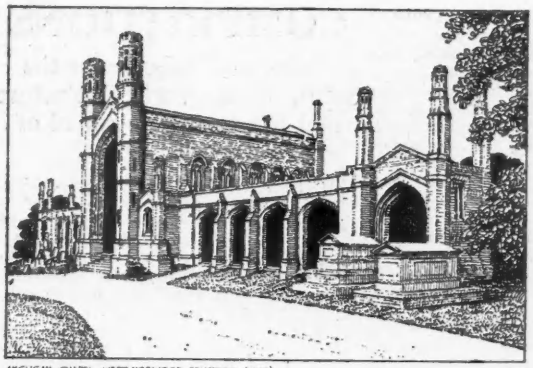
[8] The specification for this church is printed in full in C. Davy's *Architectural Precedents* (1841).



THE SCHOOLHOUSE AT MILL HILL SCHOOL IN 1949



THE SCHOOLHOUSE · MILL HILL SCHOOL
as originally planned by Tite in 1825.
Only the portions blacked in were actually built



ANGLICAN CHAPEL WEST NORWOOD CEMETERY (1838) S.J. 1949

Work at Mill Hill School.

His second competition success occurred a few months later in 1824, at Mill Hill School, and is hardly mentioned in obituary notices, though the building was of some importance. "The Protestant Dissenters' Grammar School," to give it the original title, had been founded in 1807 by a group of City merchants, at a time when the universities and public schools were closed to Nonconformists. The first project was a day school in the City, but that idea was soon rejected in favour of a boarding school for 100 boys on a country site at least 10 miles from London, and in 1808 the school was opened in an old seventeenth-century building, known as "Ridgeway House," beautifully situated on a hilltop and surrounded by a fine garden laid out by Peter Collinson, the botanist, in the eighteenth century.

The building was somewhat dilapidated, and soon proved too small. Early in 1824, the School Committee decided to erect a new school-house, and prepared instructions for an architectural competition. The schedule of requirements was singularly enlightened, for that date. The accommodation was for 120 boys, five masters, a housekeeper and four servants. The provision of classrooms, dormitories, chapel, dining-hall and library was normal enough, and in so rural a situation the mention of brewing, baking and farm-buildings was natural; but each master was to have his own bedroom and sitting-room, there were to be washing-places for the various dormitories, a covered playground, and even a swimming-bath! The building was to be centrally heated by hot air. The cost was not to exceed £15,000. "No external plastering or cement of any kind were to be used" (an illuminating comment on the prevailing fashion for stucco), and it was stated that "so much of Architectural embellishment be admitted as is compatible with the means of the Institution." Six architects, including Tite, were to be invited to submit plans: the winner to receive £100 if his design should not be carried out, the others to receive £20 each. Drawings were to be in Indian ink to 1/8-inch scale, "excepting one drawing or view which shall be at the discretion of the artist." Designs were to be accompanied by a detailed specification and an estimate of cost.

Plans were received from five of the six architects in September (one having failed to complete them in time), and were exhibited for a fortnight. Tite's design was duly chosen in November, he was appointed architect in February, 1825, the site was staked out in April, and the new school-house was opened in the autumn of 1826. It is interesting to note that a Cheshunt brickmaker quoted 47s. per thousand for bricks for this contract.[9]

Tite's building, which remained substantially unaltered when I was admitted to Mill Hill School in 1896 (save for the addition of sundry sheds of wood and iron), is severely classical and plain, but is relieved on the south side by a noble hexastyle portico of stone Ionic columns, behind which is an imposing dining-hall 36 feet high. The main block, 300 feet long, was intended to be flanked by two detached buildings, linked to it by open colonnades in the Palladian manner. One wing consisted of the chapel, added in 1832; the other, never erected, was to be the Headmaster's house. In spite of severe bomb damage in the Second World War, Tite's schoolhouse still survives with little change, external or internal; but all manner of subsidiary buildings have grown up indiscriminately around it, most of them out of keeping—in style and colour—with its austere and dignified design. It is a pity that the Governors, in later years, had no master plan or layout to guide their various adventures in building. Yet Tite evidently kept in touch with the school after he had relinquished most of his professional practice, for in 1859, as "Mr. William Tite, M.P.," he presided at the annual prize-giving or speech-day.

Thus we find him well established in practice long before his thirtieth year; besides the fortune he had inherited from his prosperous father, he had created a useful connection with influential circles in London, particularly in the City, through his first two commissions. His next recorded work was the rebuilding of the Golden Cross Hotel in West Strand. An old inn which had previously occupied the site was demolished *c.* 1830, and he rebuilt it in 1832. His new hotel had its main entrance in West Strand, and occupied about one-third of the present frontage of South Africa House, with a subsidiary frontage to Duncannon-street. As the building stood there until South Africa House was erected in 1936, its appearance will be recalled by many readers. Its elevation complied as to height, cornice-line, fenestration and style generally with the rest of the block, and was a characteristic Regency design of the plainer sort, with twelve windows in each of the three storeys and attic above the shops on the ground floor. It was astylar and covered with stucco.[10]

[9] Information extracted from the School minute books, 1824-5-6.

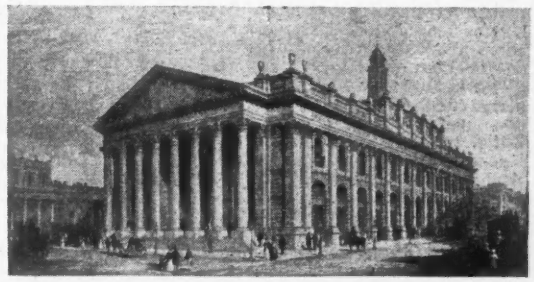
Election as F.R.S.

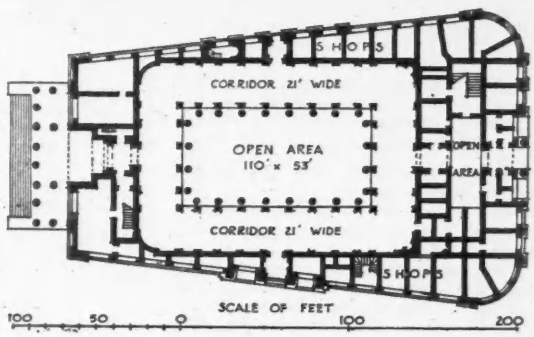
In 1832 Tite married Emily, daughter of John Curtis, of Herne Hill, who survived him. There were no children of the marriage. In 1835 he was elected a Fellow of the Royal Society, an unusual honour for an architect, but the minutes of the Society show that among the ten signatories of his proposal-form were two other architects—Decimus Burton (designer of the Athenaeum Club) and Philip Hardwick (designer of Euston Station). His address at that time was 25, Upper Bedford-place, and the application made the doubtless customary statement that he was "attached to Science and desirous of becoming a Fellow of the Royal Society," though there is no evidence of special qualifications for the distinction. In the list of members for 1835-36 of the Architectural Society (afterwards fused with the R.I.B.A.) his name does not appear, but he became its President in 1838. In that year, or the previous year, he collaborated with Professor C. R. Cockerell, R.A., in the building of the head office of the London and Westminster Bank (founded 1836) in Lothbury, behind the Bank of England. Both he and Cockerell had friends on the board of directors, and to avoid competition they worked together. Tite himself stated in his tribute to Cockerell, after the latter's death, that the exterior was mainly due to Cockerell, and the interior mainly his own.[11] The exterior is illustrated in Professor Richardson's *Monumental Classical Architecture*, p. 78. The building was demolished a generation ago when the present fine offices by Messrs. Mewès and Davis took its place, as a result of a competition held in 1921.

In 1838 Tite designed the chapels at

[10] Illustrated in *The Survey of London*, vol. xx, plate 36 (b).

[11] *R.I.B.A. Transactions*, xiv, 24 (1863).





THE ROYAL EXCHANGE, LONDON GROUND PLAN
from "The Rational Handbook of London" (Anon., pub. Bohn, 1854) p. 374

Norwood Cemetery [12] in a late-Gothic style, with walls of stock brick and stone dressings. The Anglican chapel (illustrated here) survives with no great alteration; but the Nonconformist chapel, which had been adapted to the purpose of a crematorium, was severely damaged by a flying bomb during the recent war. In April, 1839, he was elected a Fellow of the Society of Antiquaries, and continued to be one of its most active members throughout his busy life, serving on the Council continuously from 1854, and as Vice-President from 1860 up to his death in 1873. During that period he read several papers on Roman remains.

The Royal Exchange Rebuilding.

The famous competition in 1839 for the rebuilding of the Royal Exchange in London is mentioned in all the various obituary notices of Tite, but any modern reader of them soon realises that the story is somewhat unpleasant. Particularly significant are the comments of the anonymous author of the notice in the *R.I.B.A. Transactions* (XXIV, 229), who is obviously hampered by the fact that he is writing about a distinguished past-President of his Institute, and is elaborately reticent. He recalls "some dissatisfaction which prevailed at the time and is still remembered," then briefly describes the result of the first (open) competition and the remarkable procedure that followed it, culminating in Tite's appointment as architect in 1840.

Endeavouring to be absolutely impartial, I have compiled the following account of the proceedings from the actual minute-books of the Gresham Committee, by whom the business of the Royal Exchange was and is conducted. A public competition for architectural designs was launched early in 1839. Instructions to competing architects were issued by three assessors—Robert Smirke, Gwilt, and Hardwick. A schedule of accommodation was included. The total cost was not to exceed £150,000. All fronts were to be faced with stone, and the style was to be "Grecian, Roman or Italian" (without mention of the word "Renaissance"). Perspectives were only admissible if drawn from points indicated on the block-plan. Premiums of £300, £200 and £100 were offered for the designs placed first, second and third; with an additional £500 for the winner if his design should not be carried out.

Over 50 designs were duly received in August. On October 31 the assessors reported that they found themselves unable to approve any one design wholeheartedly, some of the plans being impracticable for reasons which they stated, others being too costly. The assessors then named five designs, in order of merit, but all more or less unsatisfactory, which they considered could be built for £150,000; and three more which, though architecturally excellent, could not. The Committee then resolved to award the promised three premiums, but to ask the assessors to prepare jointly a new design based on the three premiated designs. After some delay, all three assessors declined to act. It was then resolved, in November, to ask the Committee's own Surveyor, Mr. George Smith, *together with Tite* (whose name had not been mentioned hitherto in the minutes, but who had been an unsuccessful competitor) to adjudge between the eight selected designs). Tite declined, but in February, 1840—and who knows what happened behind the scenes during those three months—it was decided to have a fresh limited competition among five eminent architects, comprising the three previous assessors, Charles Barry, and Tite. Of these, all but Tite declined, evidently on grounds of professional etiquette.

Then C. R. Cockerell, whose design in the first competition had been among the three considered to be architecturally excellent, but too costly, offered to resubmit his rejected design in competition with Tite. This amazing proposal was accepted, and the two rival designs were received on April 27. Cockerell, however, submitted a large model, which was examined (according to the minutes) by most members of the Committee, and he alleged later that he had done so with their concurrence and with Tite's knowledge. Tite then objected to the model, as having been specifically barred by the terms of the original competition; and in due course was appointed architect on May 7, 1840. That is the bald outline of facts as they may be read in the Gresham Committee's minutes;[13] but much must have happened *sub rosa*.

Cockerell was very sore about the whole business, and his point of view may be judged from an article in the *Architectural Review* [14] on his life and work. "All who are familiar with the building as it now stands," wrote Mr. R. P. Cockerell in that article, "will probably agree that Cockerell's design will bear comparison with it." That is not an exaggerated claim. The beautiful wash-drawing by Cockerell now exhibited in the R.I.B.A. is masterly, and the design at least equal in merit to Tite's. The façade has six detached Corinthian columns over which the entablature is returned, with bold statuary above each column, and there is a range of Corinthian columns on the flanks. Four turrets with domed tops mark the angles of the building. Oddly enough, it fell to Tite, 23 years later, to pronounce a panegyric on Cockerell, in the course of which he referred delicately to "this incident" which "seemed to cool Mr. Cockerell's friendship; but it soon grew warm again, and, as they grew old, professional differences were forgotten and they were as good friends as ever."[15] Cockerell, however, was dead, and so we cannot know whether he reciprocated this statement. His rejected design is illustrated and described in Professor Richardson's *Monumental Classical Architecture* (p. 79), with the comment that it was superior to Tite's in many ways, and that "from a monumental standpoint" it would have "harmonised better with the Bank of England and the other surrounding buildings."

Tite's Royal Exchange [16] still stands, and in spite of its unprotected glass roof it suffered comparatively little damage during the air raids of the recent war. The great central hall is open to the public daily from 10 to 3, and for the transaction of business from 3 to 4, but in fact very little business is done there now. It still belongs to the Gresham Committee, which has rented all the upper floors of offices to the Royal Exchange Assurance Company, and the shops on the ground floor still fulfil their original purpose. The rich ironwork of the enormous gates is boldly designed. The fine internal court has two storeys of surrounding arcades, Doric below and Ionic above, with a deep cove and a beautiful glazed roof with a central dome.

(To be concluded.)

[12] Illustrated in *The Surveyor, Engineer*, etc., i, 145.

[13] There is a copy in the R.I.B.A. Library.

[14] Vol. xii, p. 133 (1902).

[15] *R.I.B.A. Transactions*, xiv, 24 (1863).

[16] Illustrated in *Pictorial Handbook of London* (Bohn's Library, 1854), pp. 371-4.

COMPETITIONS

Assessors' Awards for the South Bank Vertical Feature and Restaurant, Festival of Britain, 1951

THE results of the design competitions for a vertical feature and a restaurant to be erected in the South Bank Exhibition in London have been announced by the assessors appointed by the Festival of Britain, 1951, authorities.

THE VERTICAL FEATURE.—In this competition, which attracted 157 entries, the assessors—Gerald Barry (Director-General), Cecil Cooke, Misha Black, James Holland, Hugh Casson, James Gardner, Ian Cox, Mark Hartland Thomas, Ralph Tubbs and Antony H. Coxe—have made the following awards:—

First Prize (£300): Powell and Moya, AA.R.I.B.A., A.A.Dipls., 36 Great Smith-street, S.W.1.

Second Prize (£150): James S. Cousins, A.R.I.B.A., 11d Fawley-road, Hampstead, N.W.6.

Third Prize (£100): P. A. R. Dickinson, A.R.I.B.A., 7 Elvaston-mews, S.W.7

Special Honourable Mention: A. K. Allen, 1 Rosemont-court, Rosemont-road, W.3, and G. J. Briggs, 109 St. George's-drive, Pimlico, S.W.1.

THE RESTAURANT.—From the 67 designs submitted for the restaurant competition, the assessors—Messrs. R. Furneaux Jordan, Misha Black, Hugh Casson, Mark Hartland Thomas and Ralph Tubbs—have made the following awards:—

First Prize (£250): Leonard Manasseh, A.R.I.B.A., The Cottage, Datchworth Court, Datchworth, Herts.

Second Prize (£200): Patrick Gwynne, The Homewood, Esher, Surrey.

Third Prize (£150): P. R. Davison, A.R.I.B.A., 15 St. Mary's-crescent, Hendon, N.W.4.

Commended: James Cubitt and Partners, 25 Gloucester-place, W.1; T. Mellor, B.Arch., A.R.I.B.A., 3 Riversleigh-avenue, Lytham St. Annes; Donald L. Ward, 8 Fairleigh-court, Leigh-on-Sea, and Charles .Ogden, 44 Mount-avenue, Leigh-on-Sea; and Frank Neatfield, A.R.I.B.A., 27 Fairfax-road, W.4.

The designs placed first and second in each competition are illustrated on pages 69-72.

A public exhibition of all the designs submitted in these two competitions is to be held in the Conference Hall of the County Hall, Westminster Bridge, from January 17-21 (10 a.m.—4 p.m.).

The Vertical Feature

ASSESSORS' REPORT: In response to the invitation to designers, architects, engineers and students in these professions to submit designs for the vertical feature to be erected on the South Bank Exhibition, the promotors received 157 designs. The problem was a difficult one, not only because special originality and inventiveness were asked for, but also because the height of at least 250 ft. made very severe technical demands. The response to the invitation shows a widespread interest, and the assessors feel that the decision to hold a competition has been fully justified. There were many schemes of considerable interest, although the structural stability of some of them seemed open to question.

In the conditions it was stated that, although the feature could take the form of a normal three-dimensional structure, it might well be composed of such non-structural elements as, for example, water, steam, gas, or a combination of any of

these. It is a matter of some regret that so very few competitors made use of non-structural elements.

We feel that the winning design is both original in conception and structurally sound. The fact that the whole feature is poised in mid-air will not only be very effective at a distance, but will also give very interesting views from the terrace on which it stands. The structure of open aluminium interlacing is light and elegant and has the added advantage of reducing wind resistance.

EXTRACTS FROM WINNERS' REPORT: The aim has been to design a simple, dominant, vertical feature soaring upwards, in direct contrast to the complex and horizontal character of the exhibition lying beneath it. This feature—a tall, thin, pointed, shiny, lozenge-like body—is poised 40 ft. above the exhibition crowds on the large paved area below—a heavier-than-air structure which is suspended in a cradle of steel cables supported on three pylons. These pylons, less than 70 ft. high, would not stand out prominently from the exhibition buildings and might be almost lost among them. The deliberate illusion is therefore created of an unusual structure, divorced from the earth, defying the laws of gravity, and yet with its design based on simple and practical mechanical principles.

Viewed from a distance, or from across the river, the feature, shining in the sun by day, illuminated from inside by night, and reflected in the river, would, by its very shape, act as an enormous pointer to the exhibition. At the same time, it is also most important that this feature should be impressive, not only from a distance, but also from close-to. It is felt that, on this somewhat closely packed site, a vertical feature solidly resting upon the ground would lose its impressiveness from near at hand, however important and grandiose it might appear from a distance; its solid connection with the ground might also cut up the fine clear area of paving out of which it would rise. But when it is poised above the ground, the paved area is unbroken and exhibition visitors can walk underneath, with overawing and dramatic views upwards.

The basic assumptions in the structural design have been:

(1) A maximum wind speed of 80 m.p.h. (20 lb. per sq. ft. on a solid body or, as in this case, 10 lb. per sq. ft. on the elevational area of the open-work cladding of the structure).

(2) The working load of the cables to be one-third of their breaking load.

The complete structure is divided up into four main elements:

(1) *Feature:* A 12-sided aluminium frame, 250 ft. high, 14 ft. wide at the centre of its height, and tapering in a curve to each end, consisting of channel or "top-hat" section longitudinal members riveted to circular horizontal rings of tubular aluminium, braced with horizontal steel wire to keep their circular shape. The structure consists of four 60-ft.-high prefabricated units bolted together on site. In addition, there is a top end consisting of a spun-aluminium cone, 5 ft. high, and a bottom end of a solid conical aluminium casting, also 5 ft. high, with eyes cast on for the attachment of guy-ropes. The three main wind-bracing guys are fixed to a specially stiffened ring at the mid-point in height. The external covering of the framework consists of a lattice of ⅞-in.-wide aluminium strips, interlaced diagonally, and leaving 2-in. by 2-in. voids.

The covering of the third of the four 60-ft.-high units (165-225 ft. above the ground) can be arranged as a "rip-panel," controllable from the ground. This panel could be released in the unlikely event of a wind speed of more than 80 m.p.h. The panel would be connected by means of wires to the structure so that it would not crash down upon the paved area below.

Tungsten-filament electric lighting to be uniformly distributed in the inside of the feature throughout its height, to give an intense light.

Musical wires of calculated lengths can be stretched between points inside the framework of the feature. Any wind passing through would vibrate the strings.

(2) *Pylons.*—The three pylons, each 68 ft. high, which support the wire cradle carrying the feature, are triangular on plan and built up as an open lattice-work of aluminium tubes.

(3) *Guying Cables.*—The tensional stresses in the steel cables are shown on the drawings and range from a maximum of 29 tons to a minimum of 16 tons. The maximum size of cable required would be 1½-in. diameter (5 in. circumference).

(4) *Foundations.*—Each pylon and each guying rope requires a foundation. The nature of the foundations cannot be determined at this stage.

Method of Erection.—The three pylons could be used as derricks for the erection of the feature.

REPORT ON DESIGN PLACED SECOND.—The vertical feature is to be an extension of the symbol adopted for the Festival of Britain. It is to consist of an aluminium-clad shaft tapering to the top and base. Attached to the shaft in the manner shown in the drawings are to be four polished aluminium fins, each indicating a point of the compass. The central shaft is to be constructed as an aluminium frame; on the outside of this frame, sheet aluminium is to be welded to form a continuous skin. The four aluminium fins are fixed at the centre of the shaft, each having four arms for attachment.

The foundation for the vertical shaft will take the form of a steel ball, itself secured in a mass concrete distributing foundation; on this a steel socket in the base of the shaft will rest. The feature will be held in position by a system of steel guy ropes.

The Restaurant

ASSESSORS' REPORT.—The assessors examined the 67 schemes submitted for the competition.

First Prize: This scheme is excellently planned to give maximum orientation to the south and a full prospect of the river both from the restaurant and from the garden courtyard, the latter being pleasantly screened from the Exhibition grounds by the restaurant building. The entrance hall, service arrangements, etc., are all practical and adequate. Structurally the scheme is based upon an ingenious and economical arrangement of Dutch barn units, which should enable the author, within the limits of the expenditure allowed, to carry out the luxurious scheme of decoration described in his report.

Second Prize: This fine circular conception, with its ingenious plan and fantasy of coloured balconies was certainly the most daring and exhilarating scheme submitted. The author is to be congratulated on the high standard of presentation and the great care with which the colour and detail have been studied and elaborated. It was considered, however, that the provision of a single and narrow main staircase did not meet the requirements and such further alteration of the design as would be necessary to fulfil these could not, in fact, be achieved without seriously impairing the basic conception of the design.

EXTRACTS FROM WINNER'S REPORT.—The entrance is at the north end of the east elevation and leads *via* a small hall to the main hall, where hats and coats may be left and where one may drink before dining. From here is access to the terrace and river garden. Main lavatories are off this hall. The main stair from the hall leads to a foyer on the first floor which gives on to the restaurant. The kitchen is below.

The main structure consists of a series of standard Dutch barns of 30-ft. span, 20 ft. to eaves. Main roof is of corrugated asbestos sheeting, except for two bays of the *porte cochère* which are covered with Perspex corrugated sheeting. The first floor is supported on subsidiary steel angles clamped to main supports. External walls (except to north) are mostly glass. Ceiling to restaurant is coloured canvas suspended from the roof in a series of segmental chords. The cantilevered first-floor over the river is carried on three "Appleby Frodingham" cut-and-welded beams supported on reinforced concrete columns and tied back 30 ft. under the dance floor.

EXTRACTS FROM THE REPORT ON SECOND DESIGN.—The general conception is a frankly temporary structure formed without great precision from scaffold tubes and canvas. In plan, it is a circular platform raised 12 ft. above ground and slung partially over the river; this holds half the diners and the kitchens. A partial balcony floor accommodates the rest. At ground level are entrances, hall, offices, cloakrooms and lavatories. An overhanging roof of saucer-type acts as an umbrella and keeps off all but exceptional rain. Walls are of independent screening.

THE WINNERS in the competition for a Vertical Feature. *Left to right:* Michael Powell, A.R.I.B.A., Philip Powell, A.R.I.B.A. and H. Moya, A.R.I.B.A.

SEEN ABOVE is Mr. Leonard Manasseh, A.R.I.B.A., winner of the Restaurant Competition.

HOLIDAY IN MAJORCA

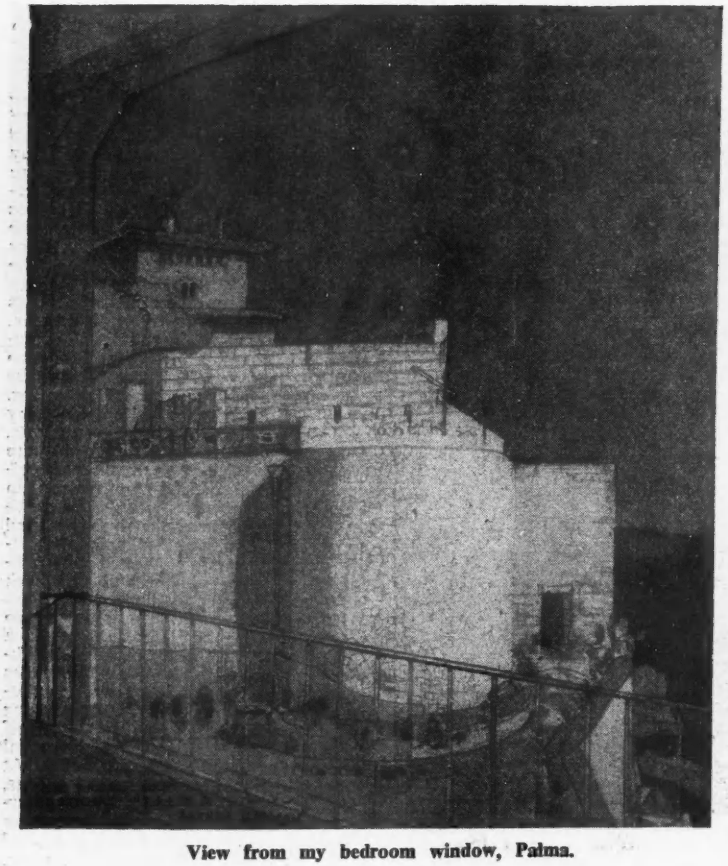
By ARTHUR Wm. KENYON, C.B.E.

(With sketches by the Author)

MAJORCA, which is the largest of the Balearic Islands off the east coast of Spain, has been discovered as a holiday resort by the Spanish people. There must have been many English people who knew this island well before the war, as the guide books tell us that it was much frequented by English and Americans, who also had residences there. The information bureaux in London do not appear to have familiarised themselves with existing conditions, and now that travel facilities are lifted no doubt many more English people will avail themselves of this beautiful island and climate, and more information may become available. It is possible to stay for about three weeks on the £50 allowance at very good hotels, at 100 pesetas to the £.

The trip to Majorca can be made by train *via* Paris to Barcelona and from there by boat to Palma, the capital of Majorca. The boat leaves at 9 p.m., either way, and arrives at 7 a.m., being a night crossing of ten hours. Berths can be booked. It is also possible to fly from London to Palma in the day, leaving London at 7 a.m., changing planes in Paris with about one hour's stay there, arriving in Barcelona about 4 o'clock, staying there for about one and a half hours and arriving in Palma about 7 o'clock.

The hotels in Palma are sited rather differently to most places, and it is as well to know this before deciding at which one to stay. The larger and more expensive ones are situated in the suburb of Terrano about four miles out of the town, and they are built on the rocks rising sheer out of the Mediterranean. There is no beach and no promenade on the water front, and there is nothing whatever to interrupt the view. A mile further out are one or two good hotels, but again without beach. For good swimmers this is no deterrent as the deep blue water laps the buttressed hotels. The first bathing beach is about five miles out. The other hotels are situated in the town itself and, although not enjoying the open view of the beautiful bay, are available to the town life. The approach to the hotels in Terrano is by tram of a somewhat typical continental pattern, crowded at all times to suffocation, but, with good temper prevailing, endurable. How they remain on the rails is a secret probably known only to the Spaniards! There is an infrequent motor bus service and, of course, the taxi, which is expensive as the drivers double the fare to include an inward and outward journey. It is important, therefore, to decide whether one wishes to stay in the town or go further out facing the Mediterranean or further still into more open country. If, on the other hand, a quiet peaceful holiday is required where bathing is good and the views magnificent, one must go further afield to Pollenza or Formentor, which nearly adjoins, or other smaller places.



View from my bedroom window, Palma.

Palma and the Shoeblacks

Palma is rather difficult to describe because it is somehow different from most towns and from what perhaps one would expect. It has a wonderful bay and harbour, backed by high hills—it seems to be embraced by them. The original town has been closely built with a short sea front, dominated by the Cathedral, which rises mightily above every other building with its heavily buttressed south front facing the sea and its west front approached by grand flights of stairs from the town and from the sea front. Its yellow stone shines in the sunlight and takes on a warm brown tone in the shade. There has been an attempt to build the town to a plan as there are two great open, wide promenades, Paseo Borne and Paseo Rambla, lined with plane trees, meeting to give shade, but not cut as in France.

Before I go on to describe the rest of the town, I must try to give some idea of Paseo Borne, which is really the central feature of the town. It is about a quarter of a mile long and the central portion which is kept purely for walking is about 100 feet wide, and the trees line each side and are continuous. There is a carriageway on each side of this promenade, lined with shops and open cafés with tables and chairs set out on the pavement. Of course, they are in continuous use; with the brilliant blue sky above, the sun casting the shadow of the great plane trees—what more fascinating place to take one's morning coffee or ice, or evening Cezano? Not only do you take your drink in peace and tranquillity, but you get your shoes cleaned at the same time.

Now this is not a matter to be taken lightly. No one goes about with dirty shoes. There is a whole army of shoeblacks, all with their portable boxes and little stools, and how they clean them! This is a craft—a real art. No wonder the people wear the gayest of patterned and coloured shoes—white, with leather strapping perhaps prevail amongst the men—and it is on these that the shoe-black shows his skill. He carefully protects socks or stockings against being soiled, and then meticulously deals with every part. For those with less leisure, there are literally dozens of very small shops where shoes can be sent for cleaning. This promenade seems to be continuously frequented and, in the evening, is a great centre of attraction. We must remember that the Spaniard dines late, from 9 to 11 p.m., and lunches from 2 to 4 p.m. The other promenade, Paseo Rambla, is not so attractive, as there are no shops and no cafés, but it affords a fine open space amongst otherwise congested buildings.

Spanish Tiles

The rest of the town is built of narrow streets with small shops and people working at their trades—watch repairing, shoe making, basket making, metal work, furni-

ture, etc. They appear to work in the dark, but it is really only dark by comparison with the brilliant light outside. The buildings are three and four or more storeys high, and above the shops are the dwellings approached by narrow, very steep and long flights of steps, universally with brilliant Spanish tile risers. Perhaps there are no bye-laws demanding only 15 risers and minimum widths. In their older and new blocks of flats, the entrances are from internal courts, with fine staircases leading to the various apartments. The courts are laid out with marble paving, and there are palms and exotic flowers growing. They are beautifully clean, as are the interiors of the houses. There are buildings old and less old, some with magnificent cornices, beautifully decorated, projecting 5, 6 or 7 feet and almost touching in places. What more can be said without seeing for oneself ? It would require a book to describe the narrow streets, the open " platz," the steps mounting from one level to another. One regrets the noise of vehicles—trams clanging along narrow streets without footpaths, only wide enough for one tram, the hooting of the motor horn, the screeching of brakes. All this, one feels, could be eliminated, but then—this is Palma. There is the usual big market place where all types of food can be bought, for although there are food shops most of the buying is done in the market.

The development of the town has extended in all directions into the hills in a sporadic way, and there is every conceivable variety of design in the hillside villas, planned to allow for an open-air life with porticos and terraces. No effort is spared, and great ingenuity is expended in designing the massive retaining walls and colossal flights of steps which lead from one level to another. The gardens in many instances are exquisitely laid out with sub-tropical plants. The lawn, of course, plays no part in the design.

Valdemosa

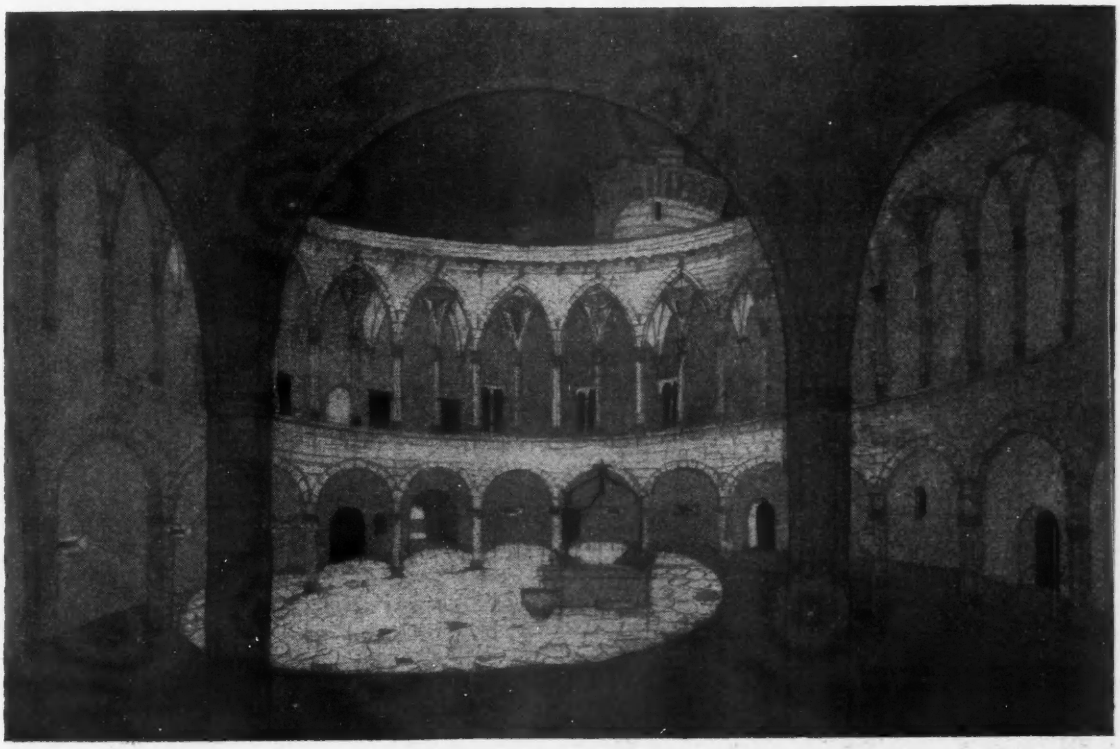
There are numerous excursions from Palma and, as I said in my opening sentence, the Spaniards have discovered Majorca and they go on all these excursions ; when one visits Valdemosa, renowned because of Chopin's friendship with George Sand, it is almost impossible to see the most charming and exotic enclosed gardens attached to all the suites of " Cells " for the dozens of amateur photographers posing their fair ladies, some of them very beautiful, amongst the cacti or orange trees. If one could visit Valdemosa without the swarms of people, one would find it very beautiful, and the small theatre where folk dancing takes place is extremely attractive.

Of the other attractive small seaside villages, the one at Pollenza is perhaps the most visited. This place has a beach with sand and is in another very attractive harbour. The hotels cater for the coach traffic but, by a mountainous road or by sea in half an hour, the lovely spot of Formentor is reached with only one hotel, well appointed and well sited, and this hotel seems to cater for every need and is certainly a place where one can feel at peace with the world. There are many other small places to be discovered if one has time.

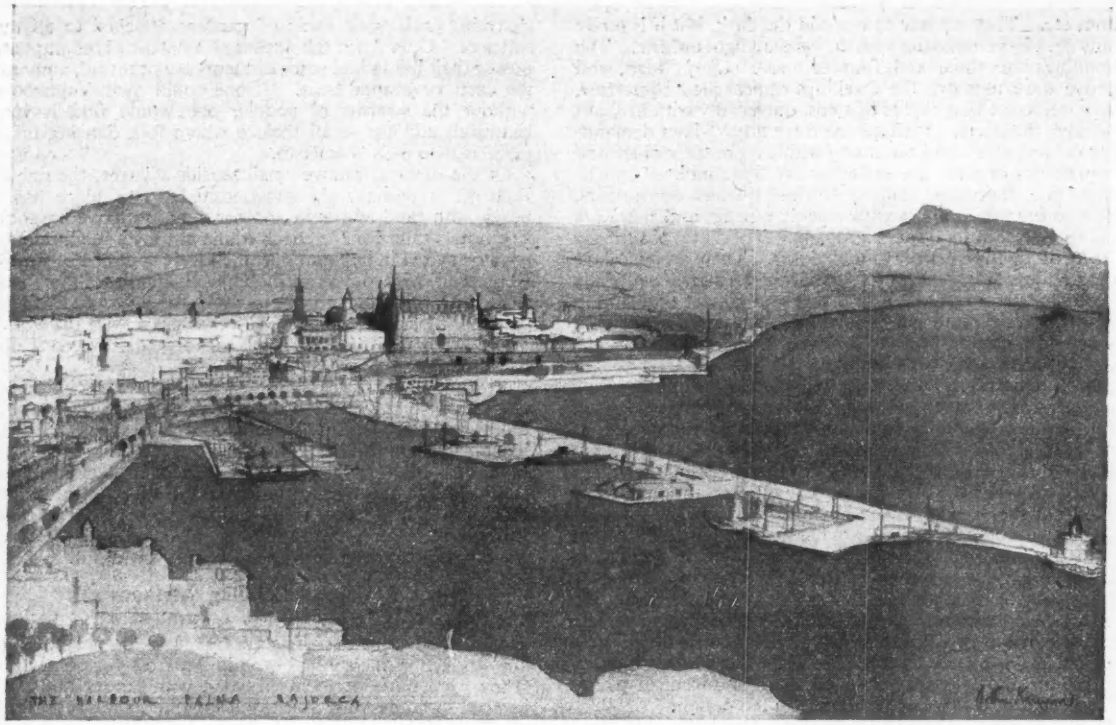
Visitors to Majorca have, therefore, many choices of places for holidays. It is difficult to speak of the weather unless one has visited a place during all seasons, but, like most warm countries, everyone says early Spring is the best time. In Majorca the mimosa flowers in January, February, March and April; these are the months to see the blossoms, but we cannot all indulge in holidays at those times, and I can say that in September, although hot and the country dry, the climate is yet very beautiful.

Majorca's Building Methods

I might be expected to say something of the building methods. I went over several buildings in progress and they looked as if they had been in progress for some time. They were none of them crowded with labour and work seemed to go casually along, but long hours appeared to be worked. The methods of construction were so entirely different to our own that I should have found it quite impossible to have said whether the work was done correctly or not, or well or badly. There is practically no timber used in construction ; there is hardly enough for scaffolding ; no timber centering is available for arches and they go to all kinds of ingenious methods to support them during



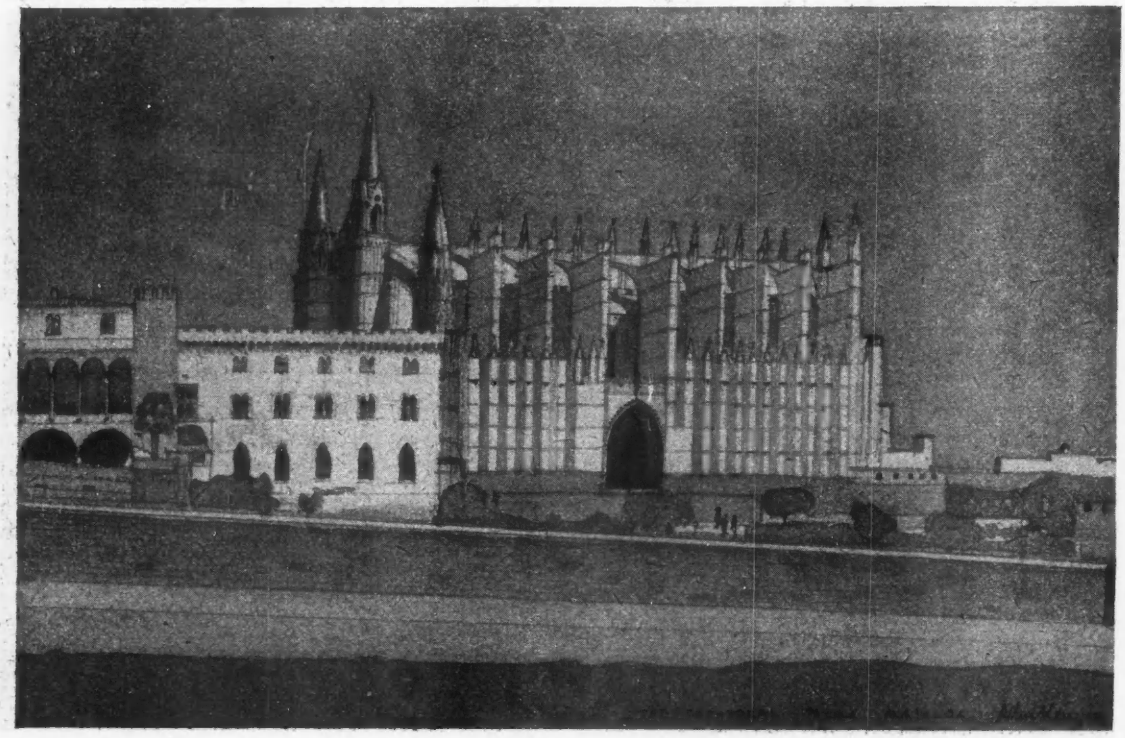
Bellvar Castle, Palma.



The harbour, Palma.

building. I did not see a wheelbarrow ; no doubt they know best and still use baskets for carting things about. There is very little steel and no bricks. Stone is used in random rubble, and concrete is used quite considerably.

And so Majorca is a holiday place with only local industry. Olives and almonds are grown very extensively, and the ground has a good irrigation system. Grapes, figs, lemons are grown, but not extensively.



The Cathedral, Palma.

Economical School Planning

SOME EFFECTS OF RECENT M. of E. CIRCULARS

By HOWARD V. LOBB, F.R.I.B.A.

THE issue of the Ministry of Education's Circular No. 209, followed by the "School Premises Amending Regulations" (Statutory Instrument 1949, No. 2279) and by Circular 212 explaining them, introduces a marked change in official policy towards the design of schools : for the first time since the war architects must design down to a price instead of up to a standard. However regrettable this may be, it has to be accepted, and the school architect must see how he can effect the economies demanded and still uphold, as far as he can, his standards of planning, construction and design.

The Minister of Health and the Minister of Education have accepted their cuts in different ways. Mr. Bevan has chosen to reduce the number of houses rather than accept lower standards, while Mr. Tomlinson has preferred to maintain the total number of schools proposed but to reduce their size and cost. Both these methods can be justified : a house is a unity and cannot be pared down without suffering permanent injury ; the dismal experiment of building obsolete houses was tried between the wars. A school, on the other hand, contains many parts, some of which can be reduced or omitted without impairing the rest : a good classroom is still good, even if the cloakrooms are not as generous as they might be.

Some Suggested Economies

Circular 209 requires that the cuts should be applied in the following ways so far as the planning is concerned :

(*a*) The scale of lavatory accommodation has been reduced (this measure was already being partially enforced before the issue of the Circular).

(*b*) Coats are to be hung in circulation spaces thus saving or reducing the large areas formerly provided for cloakrooms.

(*c*) Accommodation in secondary schools that will be required only when the school-leaving age is raised to 16 is to be omitted for the present.

(*d*) Various minor economies in planning are also required.

(*e*) The provision of accommodation for meals in existing schools is to be suspended.

While some of these measures—and particularly the omission of proper cloakrooms—are undoubtedly retrogressive, at least the principle of "first things first" has been observed and the teaching accommodation required while the school-leaving age remains at 15 is left completely untouched.

The scale of the cuts may be judged from the Minister's statement that the reduction in 1950 is to amount to 12½ per cent. ; a maximum cost of £170 and a maximum area of 55 sq. ft. per place have been laid down in Circular 209. These figures per place refer to normal-sized primary schools ; the corresponding economies in the secondary school programme are being studied further, but it is understood that maxima of about 90 sq. ft. and £290 per place will probably be imposed. Some latitude will be essential since secondary schools vary more in their requirements than primaries.

The architect who has to give effect to these economies should consider the following points :

(*a*) Hanging coats in circulation spaces does not necessarily mean they must be arranged along the corridors ; Circular 212 makes it clear that bays opening off the corridor will be accepted.

(*b*) Double banking, that is, rooms on both sides of the corridor, will be generally necessary ; corridors can be lighted through the cloaks bays. For adequate lighting under these conditions the lavatory and cloaks block at the rear of the corridor should very likely be shallow on plan. Low ceilings will be sufficient for these shallow blocks, and that is a further economy.

(*c*) The stores between classrooms should be kept to a minimum since excess area here generally produces an excess length of corridor also. Perhaps stores could be placed between the corridor and the classrooms, in which case height could be saved as well as corridor length.

(*d*) An obvious necessity for economy is clean, smooth planning as opposed to the pleasing intricacy of some recent school plans. On the other hand, subdivision is justified on sloping sites, to allow the floor levels to adjust themselves to the fall in the ground.

Economies in Plan

Economies in plan can be reinforced by economies in construction. If double banking is accepted, single-storey buildings are inevitable, unless the recent gains in daylighting are to be entirely surrendered. The extra cost of single-storey work should, however, be offset by taking advantage of its lightness ; all too often school foundations are massive enough to carry three storeys instead of one. On practically all soils they can be concentrated at points of support in the form of mass-concrete blocks or hand-bored piles with foundation beams just below the surface of the earth spanning between them. A raft foundation will sometimes be a suitable alternative, but a continuous foundation deep enough to obviate the effects of frost or of dry-weather shrinkage in clay is extravagant. Underground ducts are perhaps an expensive alternative to the care and attention necessary to arrange exposed pipework tidily ; but if they are provided, such arrangements as that in Fig. 1 should be avoided. It is obvious

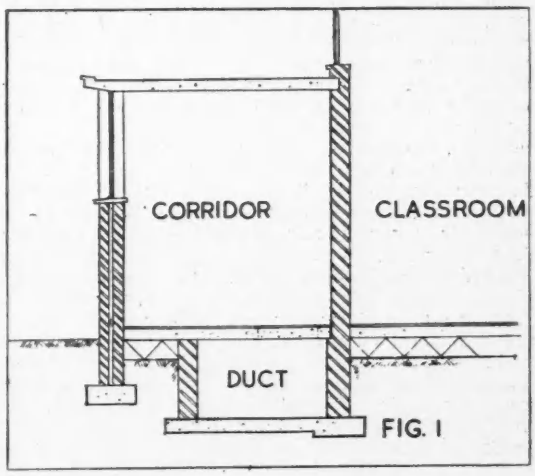


FIG. 1

that any economy in reducing the width of the duct below that of the corridor is more than wiped out because the foundations on one side are virtually duplicated.

The opening portions of windows should be carefully studied : if they cannot be readily operated they are a waste of money. It is more economical and much more efficient to provide 50 per cent. opening portions all within reach, or controlled by gearing, than 100 per cent. opening much of which depends on someone going to look for the long arm !

Some education authorities and commercial firms have adopted constructional systems specially evolved for school building. These are of value in reducing the calls on normal constructional resources, but it has yet to be proved that they can under-cut a sensibly designed traditional building of comparable standard. Structural elements which are "standard specials" for the school programme are not necessarily cheaper than things such as bricks and rolled steel joists that are standard throughout the whole building trade. Nevertheless, traditional

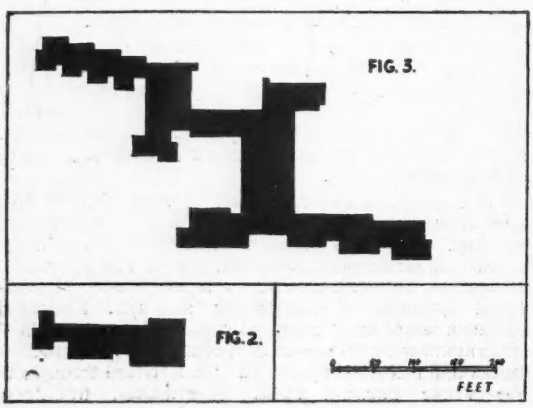
construction can be combined with modern structural elements—roof decking units, for example. The advantage of these is not so much an immediate saving in cost over the older and heavier roof types as of the economy that results from the lighter substructure they permit. There is also the advantage of speed in erection.

It seems certain that if such economies in planning and construction are intelligently applied it will be comparatively easy to reach the reduced cost per place of £170 without being mean about the quality of materials and finishes. Any economies in these respects would indeed very soon prove to be false ones. In a school perhaps more than any other building, everything must be very strong and hard wearing in fact, although not obtrusively so in appearance.

Open v. Compact Planning

The architects of recent school buildings have often exploited the interesting effects of open planning with excellent results and they are not to be blamed for doing so. Nevertheless the discipline of economy is a salutary one. In unskilled hands open planning has tended to degenerate into sprawl and that at least will be prevented by the more compact planning necessary for economy. Good composition and proportion need cost little; nevertheless they are given point and punch by centres of interest and works of art which will inevitably reveal themselves in the bills of quantities. It is sincerely to be hoped that economy will not be pushed so far as to eliminate these minor " humanities."

Circular 209 has been followed, rather belatedly, by the Ministry of Education Building Bulletin No. 1 on Primary Schools. The Bulletin, although it stresses economy throughout, is conceived rather on the earlier principle of building up to a standard, and conversion to the new viewpoint is represented by an inset slip pointing out the modifications necessary to bring the Bulletin in line with Circular 209. The humane and imaginative approach of the Bulletin is altogether to be praised and in many points of detail practical guidance is given to the school architect. In advising, however, that the school should be broken up into small units—that classrooms for instance should be largely detached so that windows may be obtained on adjoining walls—the Bulletin seems inevitably to run counter to the demand for economy in Circular 209. A simple, unbroken plan has always been a prerequisite of economy. It is doubtful whether the saving due to the reduction in height, which lighting from two adjacent walls would make possible, would balance the extra cost of building more than one external wall. In some respects the authors of the Bulletin in their idealism have failed to recognise the way in which a school is used: for instance, entrances through cloakrooms are condemned in favour of a single dignified entrance hall, but as long as children are assembled in the playground and marched to their classrooms, leaving their coats on the way, entrances through the cloakrooms will remain convenient and practical. The routine is perhaps open to criticism, but if so the teachers must be reformed before the architects. In the meantime, even entrances through cloakrooms can surely be made pleasant and seemly.



The Ministry seem to be obsessed by a hatred of the institutional, and in so far as that character is symbolised by the chocolate or dark green dadoes of the past everybody will sympathise with them. But, perhaps, the attempt to give a school a domestic character is inappropriate as well as impractical. The Bulletin does its best to help by condemning primary schools larger than two-form entry, but even so a school for 360 is still a big building, and breaking it down into a number of little buildings may very well destroy its unity without relieving its monotony—just as a long row of semi-detached houses is at once more restless and more boring than the same houses built as a terrace.

Mr. Aslin's school at Essendon* has been described, rather preciously but not altogether without truth, as having the " endearing graspability of a jewel." The type of layout that suits a village school, however, is not necessarily so pleasant when adapted to a school serving a big housing estate. (Figs. 2 and 3.)

The Example of Dudok

Dudok of course is dreadfully out of fashion nowadays, but did he not build schools that were frankly institutions and yet were better as designs and far more humane in feeling than anything we have yet achieved? And his simple and compact plans are at the same time models of economy.

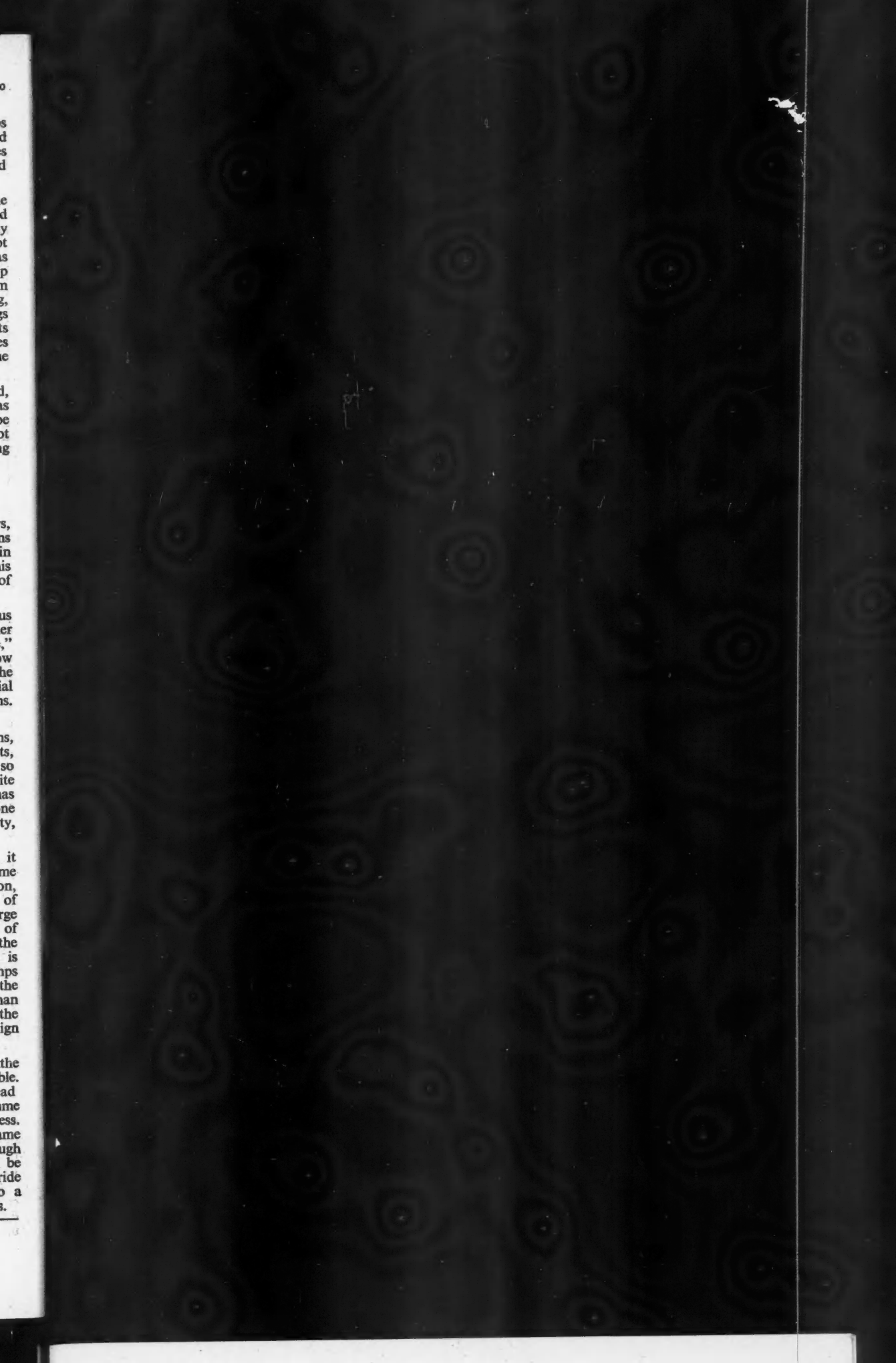
While the cuts to be imposed in 1950 may still leave us with good and convenient schools, there is a further reduction to be faced. " In the 1951 programme," Circular 209 states, " a reduction of 12½ per cent. below 1949 costs will not be sufficient." It is clear from the Circular, and also from the Building Bulletin, that official opinion is hardening in favour of standardised systems. The introduction to the Bulletin, for instance, says:—

" Standardisation will be necessary, not of plan forms, but of structural components, such as beams, wall units, windows. And these components will have to be so designed that they can be assembled quickly on the site by a small labour force. Some work in this direction has already been done ; but more must be done, and done quickly, if the concurrent problems of quality, quantity, speed and economy are to be solved."

Apart from the doubtful economy of this policy, it does not conform to the ideal expressed on the very same page that " there will be no final and ready-made solution, but rather a continuous process of trial and error, of exploration and experiment. Authorities with a large educational building programme covering a number of years will be able to incorporate in successive schools the experience gained in those already completed." It is inevitable that standardisation can progress only by jumps and not by a process of continual modification. Must the Ministry's preoccupation with mechanical rather than organic solutions reduce the individual architect to the role of a mere assembler of components over the design of which he has no control?

Nevertheless so far as they have gone at present, the cuts have been imposed in as merciful a manner as possible. The Minister is to be congratulated on keeping his head and in particular not ruining the impetus of his programme by insisting on immediate economies in work in progress. If the economies yet to come are approached in the same spirit, school architects will find that their work, although simpler and more modest than it once was, will still be capable of stirring in them that enthusiasm and pride which so strangely transmutes sticks and stones into a work of art with a life that cannot be expressed in words.

* *The Builder*, November 25, 1949.



View from the air.

THE MAHARAJAH'S PALACE, JODHPUR

H. V. LANCHESTER, Litt.D., F.R.I.B.A., M.T.P.I.
AND T. A. LODGE, O.B.E., F.R.I.B.A., ARCHITECTS

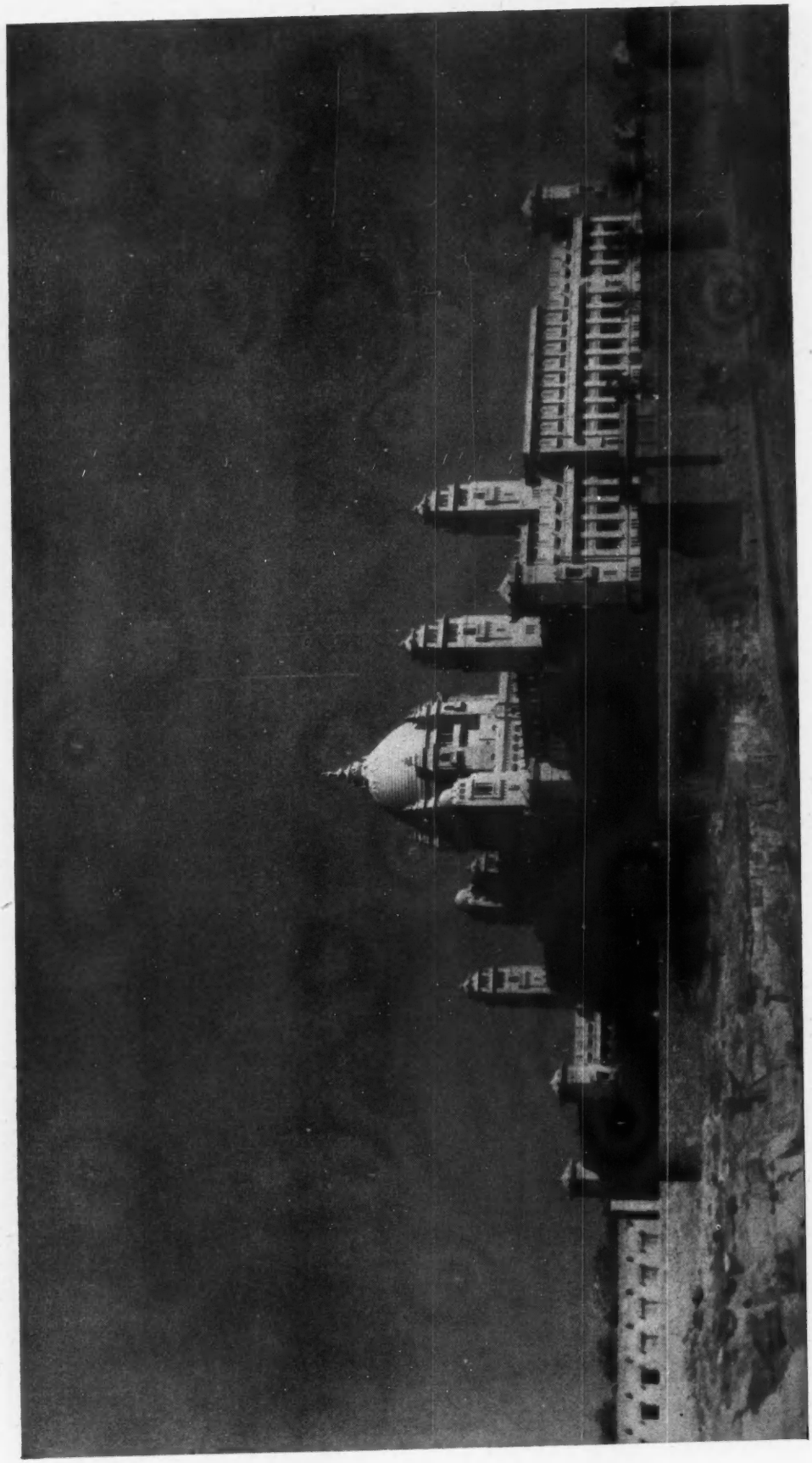
THE Rajput state of Marwar is popularly known as Jodhpur after its capital city, which grew up beneath the towering rock on which the Maharajah in mediæval times built his main fort. Up to the middle of the last century the fort included the palace, but the rooms were small and the planning was much too congested for convenience while no gardens were possible; therefore various arrangements were made to provide for a palace elsewhere.

Most of the land to the south and east of the city is fairly level and would be fertile and productive were it not for the limited and uncertain rainfall, but the level ground is interspersed with numerous rocks and rocky outcrops on which grow only small ragged trees and scanty scrub. Near the city to the south-east is Chittar Hill, one of these outcrops, about a mile and a half long by half a mile in width and 100 feet high. This was an early choice for the site of a palace, and one was begun here but the lack of water and the very unattractive surroundings led to the abandonment of the scheme in favour of various buildings erected at different dates on the lower ground to provide such accommodation as was urgently needed. Architects were consulted from time to time but nothing definitely took shape until Messrs. Lanchester and Lodge were commissioned to prepare a design for a palace to be erected on Chittar Hill.

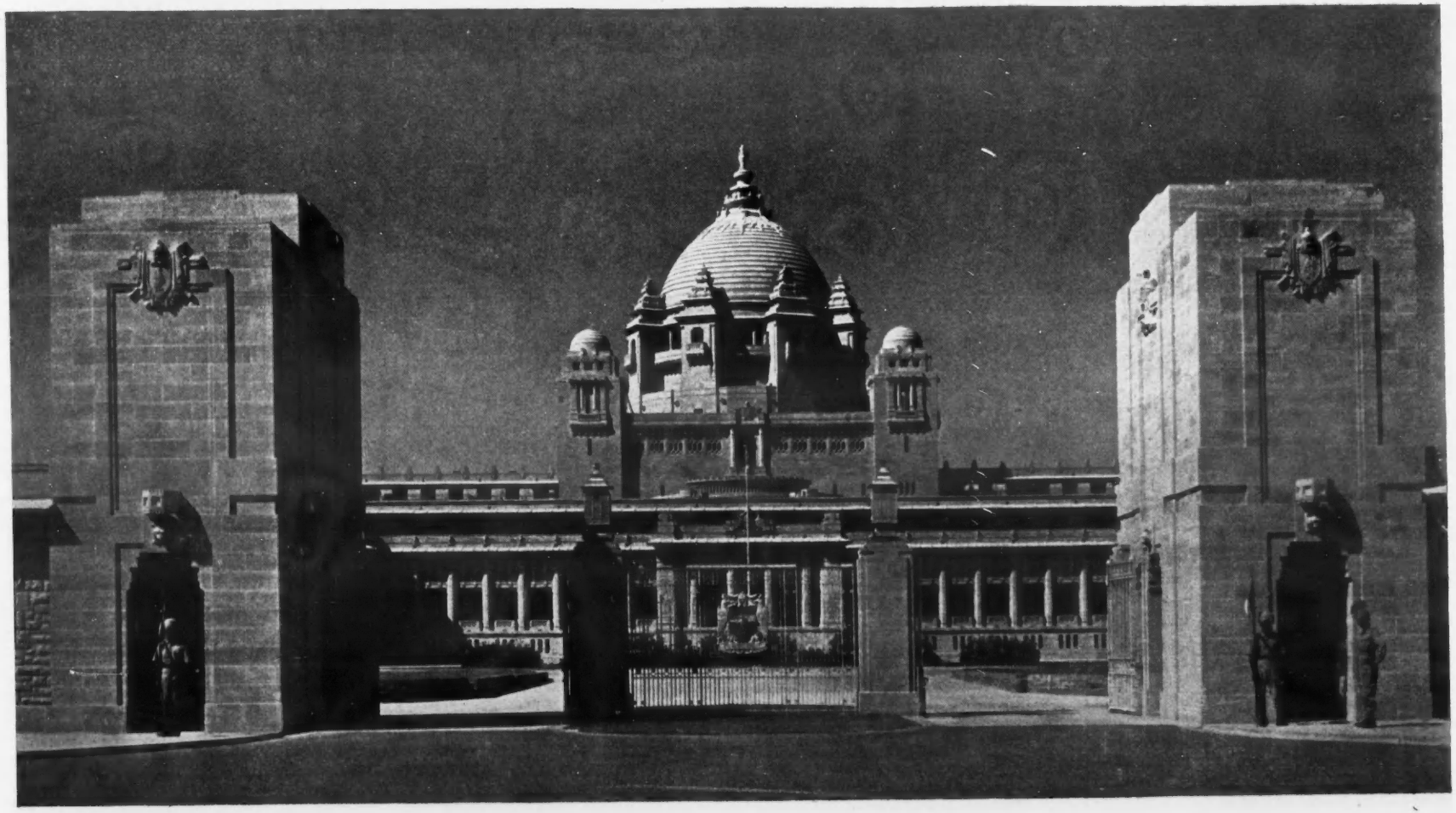
In view of the obvious difficulties, the architects' first proposal was to place the palace on a spur of the rock and to form terraces down to the level ground suitable for gardens; but this was rejected, as the official view was that it was contrary to the auspices that the palace should be anywhere but on the highest level. This had the merit of giving an outlook over the plain extending some thirty miles to the south, with an aerodrome in the foreground. An examination of this site indicated that the preparation of foundations for buildings presented little difficulty, but that the provision of adequate amenities surrounding them was a serious problem. Soil had to be brought from as far as a mile away and the rock broken up by blasting to give root space for trees and the larger shrubs. Donkeys were found to be the most economical mode of transport for earth, and over half a million donkey loads were brought from the lower levels.

The standard of building material in Jodhpur is good red stone which is available almost everywhere, but within twelve miles is the Sussagar quarry which gives a first-class hard freestone, cream coloured with a slight tinge of pink, suitable for both internal and external facings and ideal for carving, mouldings, etc. The transport of this justified the installation of a branch (metre gauge) railway line, graded up the hill from the east and delivering the stone to the masons' sheds at the site. Discrepancies in the levels of the site were dealt with in the planning and the material removed was employed in roadmaking, filling in, terracing, etc.

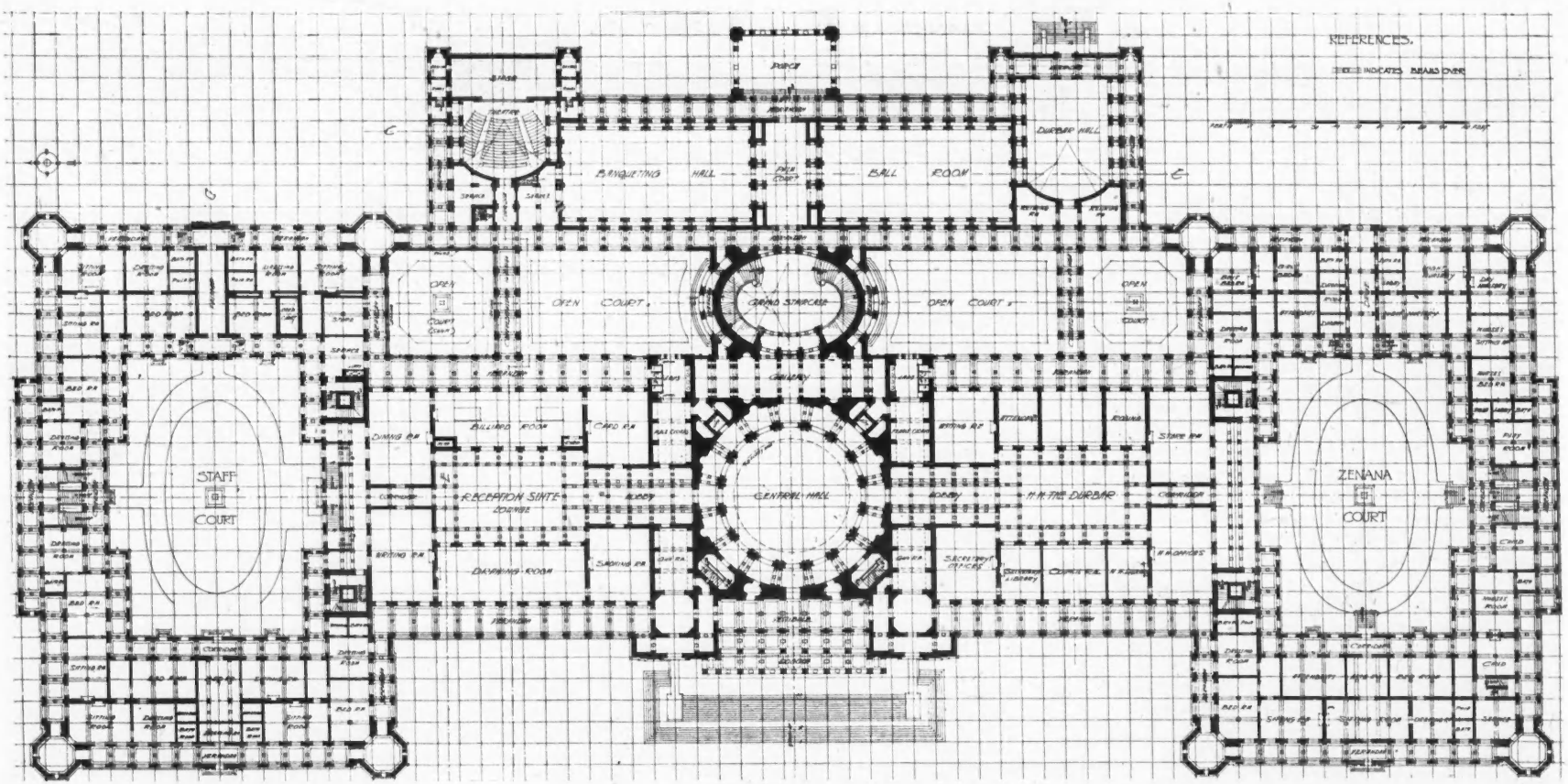
Passing on to the planning of the palace, tradition demanded that it should be aligned on the points of the compass with the main entrance facing east. On this side, therefore, were placed the entrance gates and their guard rooms, beyond which a circular drive led to the porte-cochère and subsidiary routes to the staff court to the north and the zenana court to the south of the main building. The eastern frontage on either side of the central entrance was allotted to the principal reception suite, comprising a theatre (for stage and cinema) and banqueting hall to the north and a ball-room and durbar hall to the south. All these rooms have galleries at a mezzanine level connected with the zenana wing so that, by the use of gauze purdahs or



View from the south-west.



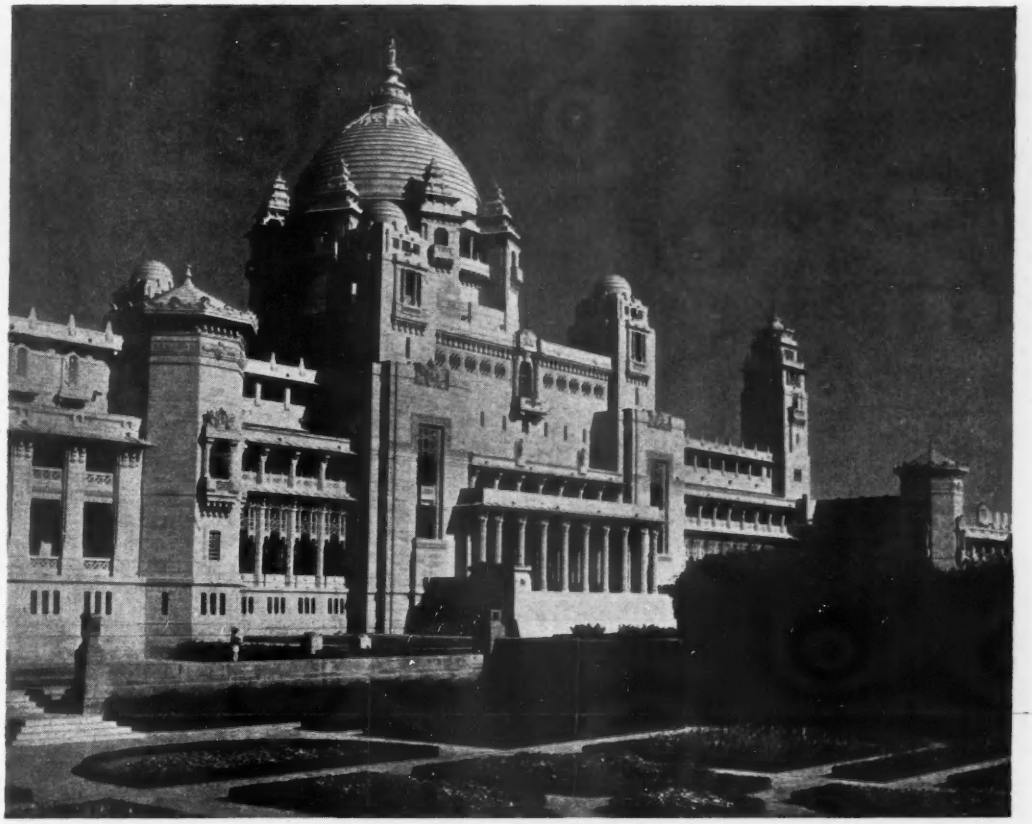
View showing the main gates and guard rooms.



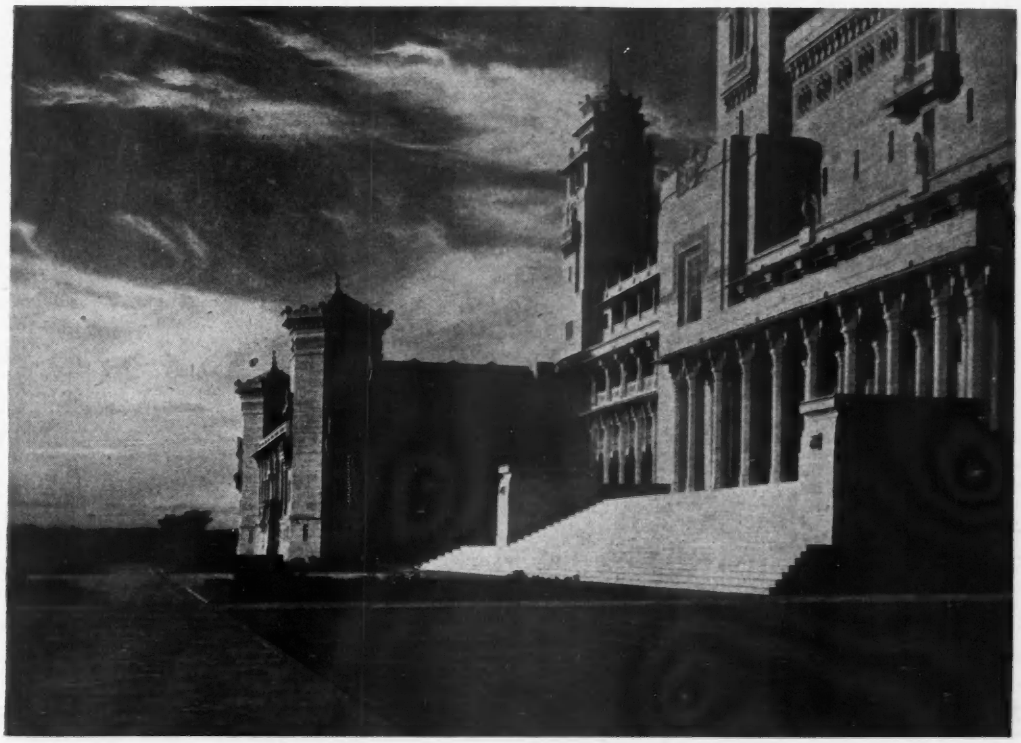
Ground-floor plan.

screens, the ladies of the court and their attendants can see all that goes on, while in complete privacy.

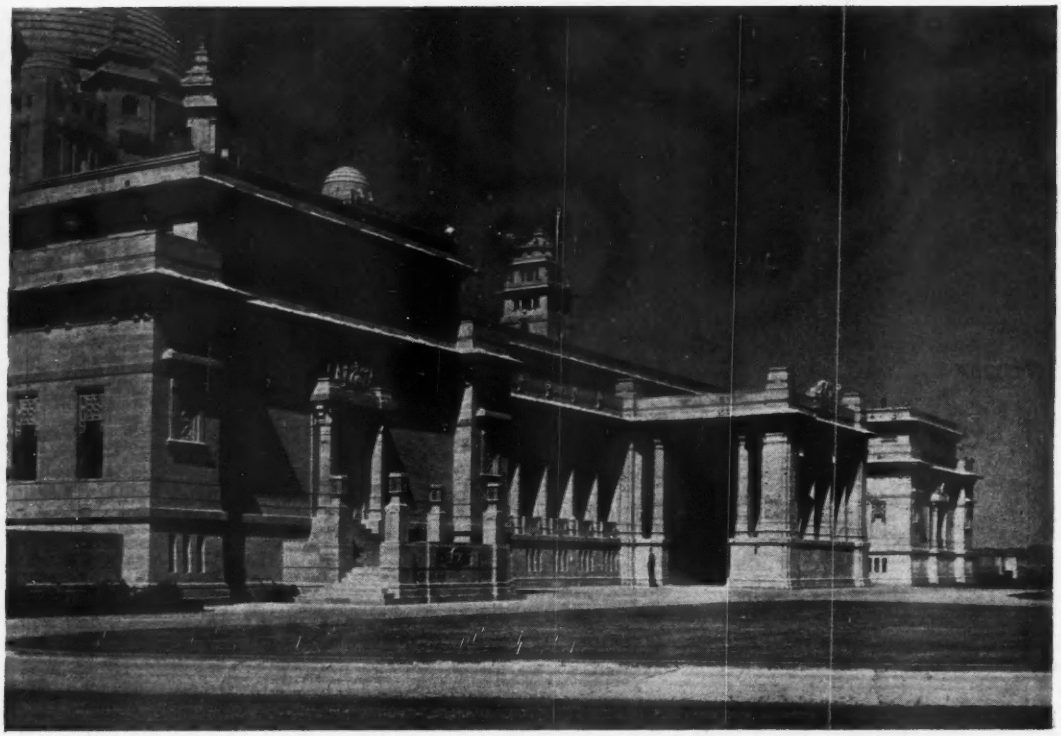
Continuing westward one passes into an elliptical hall, accommodating a double staircase to the upper floor of the main block, and then on to the central hall under the dome. To the south of this are the Maharajah's official rooms on the ground floor, and his private rooms over, communicating with the zenana wing. To the north are the rooms for guests of high importance, and beyond, in the north wing, suites for officials, staff and minor guests. Under this wing a lower floor provides for a range of service rooms. The zenana was placed at the south end of the palace as this abuts on the steep southern escarpment of the hill and could not be overlooked while it commanded the wide view before mentioned, extending on clear days as far as the Aravalli Mountains, both from the verandahs and the enclosed gardens



The garden front, facing west.



The garden front, from south-west.



The entrance porch. *Below*: **Public entrance to durbar hall.**

outside. These gardens have outlook kiosks in the south wall, and the one to the west includes an open-air gymnasium for children's games.

The zenana garden had to be separated from the main ornamental and pleasure grounds to the west and north; a large lawn surrounded by flower beds and shrubs marks the central axis westwards; north of this are the tennis courts, covered squash courts, garages, etc. The gardens had to be designed to provide the required amenities while taking into consideration the limits of the water supply available. Though State expenditure during the last 25 years has been considerable in regard to the provision of reservoirs, canals and pumping stations, in the effort to ensure an adequate constant supply, there is frequently a shortage owing to the unreliability of the rainfall and the fact that the population of the city has doubled.

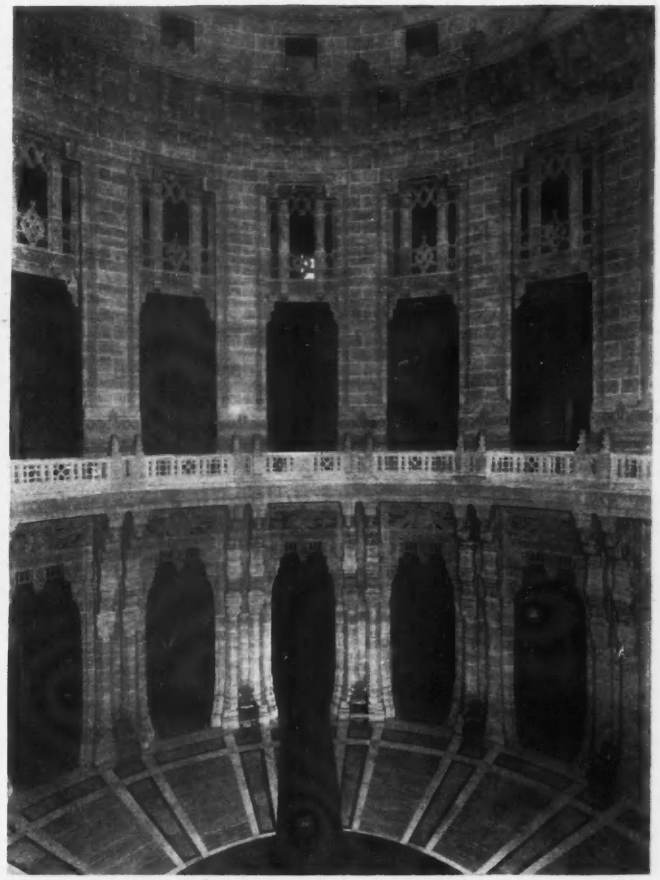
The design of the buildings was based on climatic conditions; to secure an equable internal temperature not contrasting too greatly with that outside, verandahs are essential and, to mitigate the strength of the sun's rays, these are partially filled in with perforated screens, termed "jallis," while the verandahs also facilitate the use of supplementary blinds or screens in the hot season. The experiment made at Delhi of building with thick walls and small openings proved a failure, as in winter the buildings cooled at night and the sun was unable to warm them in the morning so they remained too chilly, and additional heating had to be installed.

The palace is air-conditioned on the Carrier system with a small amount of radiant heat electrically supplied for winter use. In general, the internal temperature is thermostatically controlled, but it is not usually desirable that this should be more than 25 deg. F. below the external shade temperature, as an excess over this variation is liable to give a chill even during the hotter season.

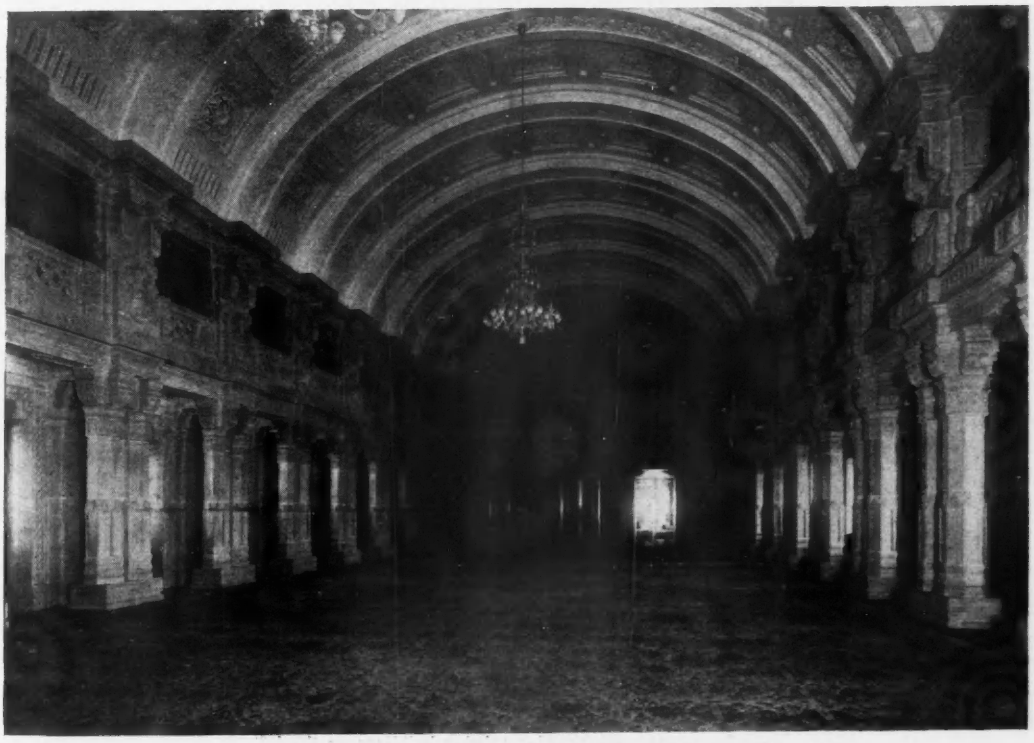
In the architectural treatment and

ornamental detail, any use of "Indo-Saracenic" features was regarded as inappropriate, in view of the fact that the States of Rajasthan only came to a very limited extent under Moslem domination and the traditions of this area employed such features but little, while the Hindu style of building displays many distinctive and interesting features. The models for sculpture and ornament, based to some extent on Hindu tradition, were the work of Mr. J. Roslyn. The resident architect was Mr. G. A. Goldstraw, A.R.I.B.A.; and the consultant for the gardens the late W. R. Mustoe, A.R.H.S.

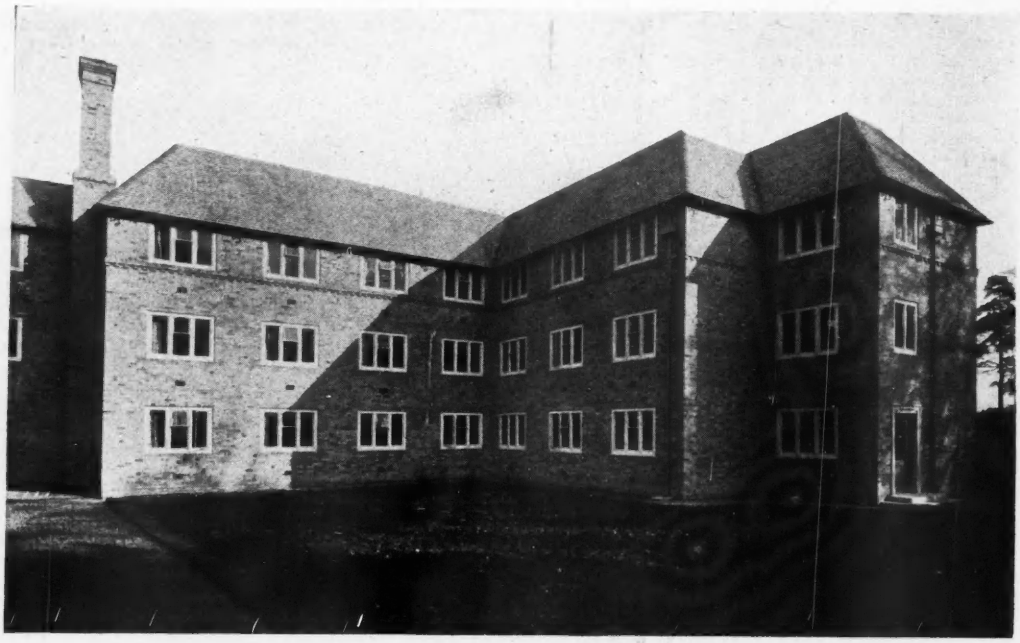
Reverting to the gardens, with few exceptions the trees are "neems"—a very common roadside tree in Northern India. Their foliage is thick enough to give shade, and is almost evergreen. On this exposed site full development was not expected, and therefore planting 25 ft. apart was adopted. Jacaranda trees form the front line of the curved belt on the west boundary of the central garden. Their blue flowers are difficult to see at a distance unless backed by heavy foliage so the trees were cut down to 4 ft. high and allowed to grow as large "shrubs." Neither of these trees makes heavy demands on water. To the north an area was reserved for a tented camp. Platforms and water points were provided and trees planted at suitable spacing to shade the tents. The hill area, outside the garden, is now better clothed than when construction started, due to the quick-growing hardy "Prosopis" introduced into Northern India by the late Mr. Mustoe 30 years ago. To the west of the palace it was deliberately planted in rock fissures where a little soil is found. Apart from clothing the rock it has value in reducing radiation of heat which is important in affecting the prevailing wind.



The central reception hall.



THE MAHARAJAH'S PALACE, JODHPUR. The banqueting hall.

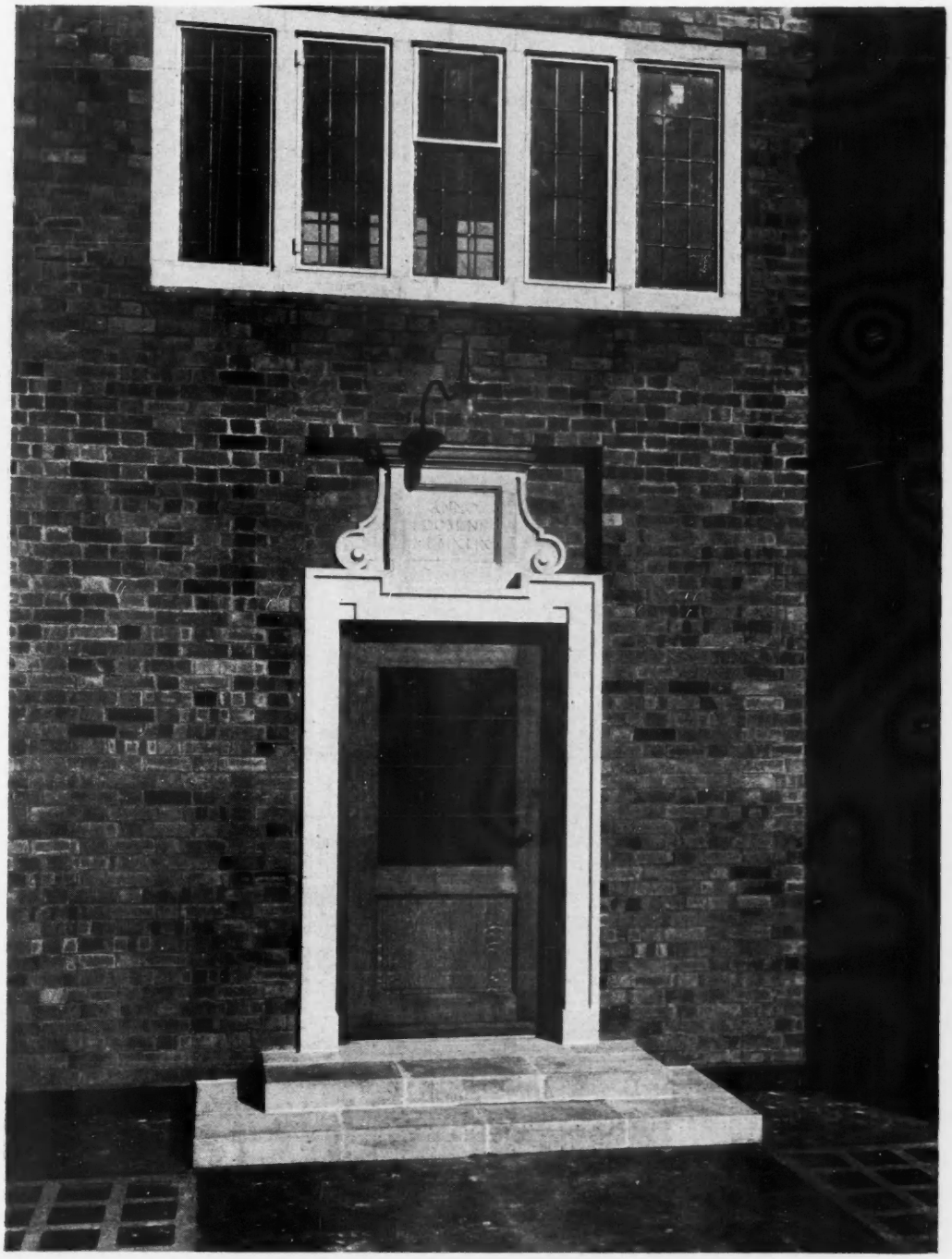


HOSTEL FOR WOMEN TEACHERS, HOCKERILL

for the Central Council of Church Training Colleges

SEELY AND PAGET, ARCHITECTS

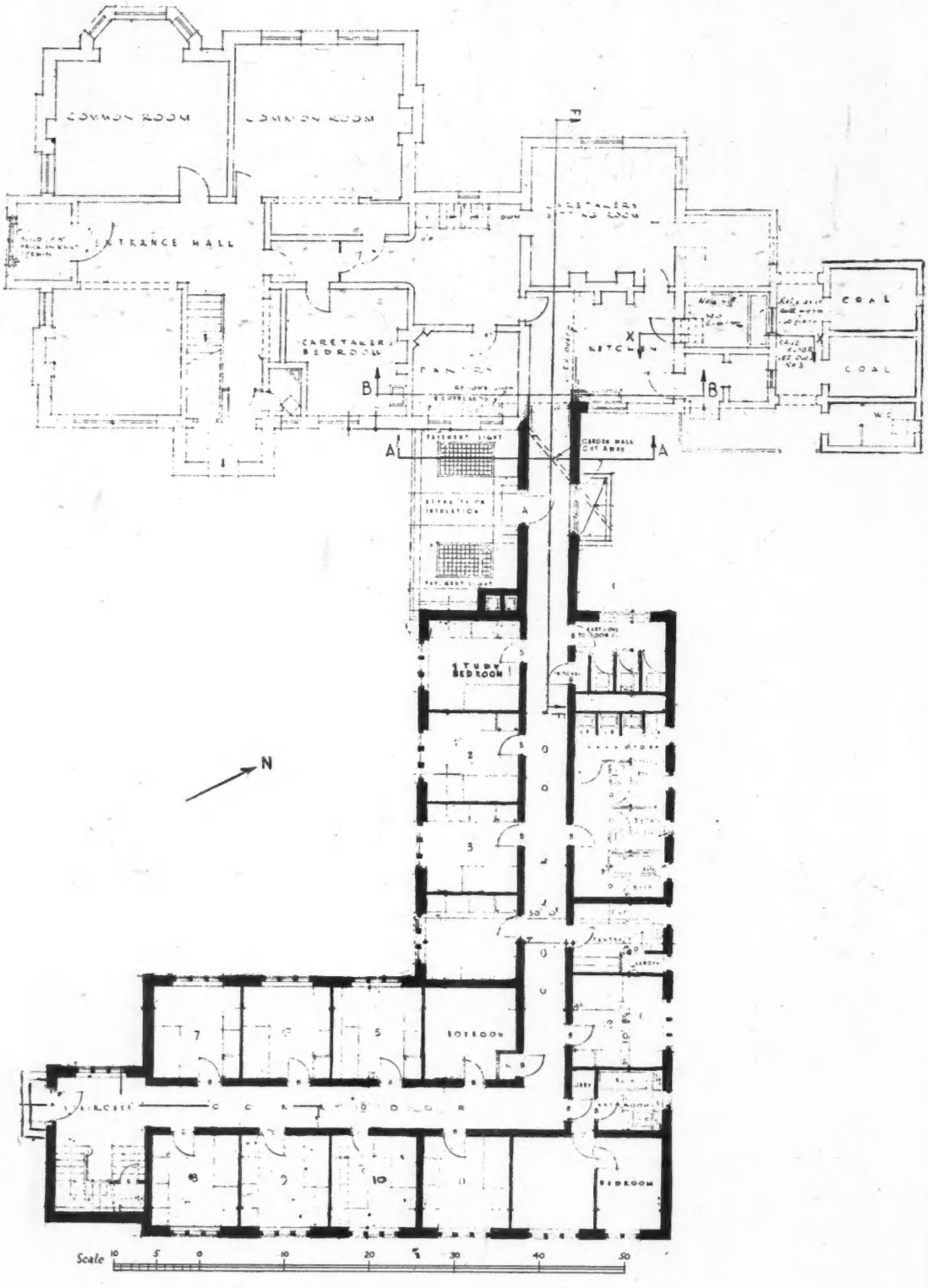
View from courtyard, showing existing buildings on the left.



Detail of courtyard door.

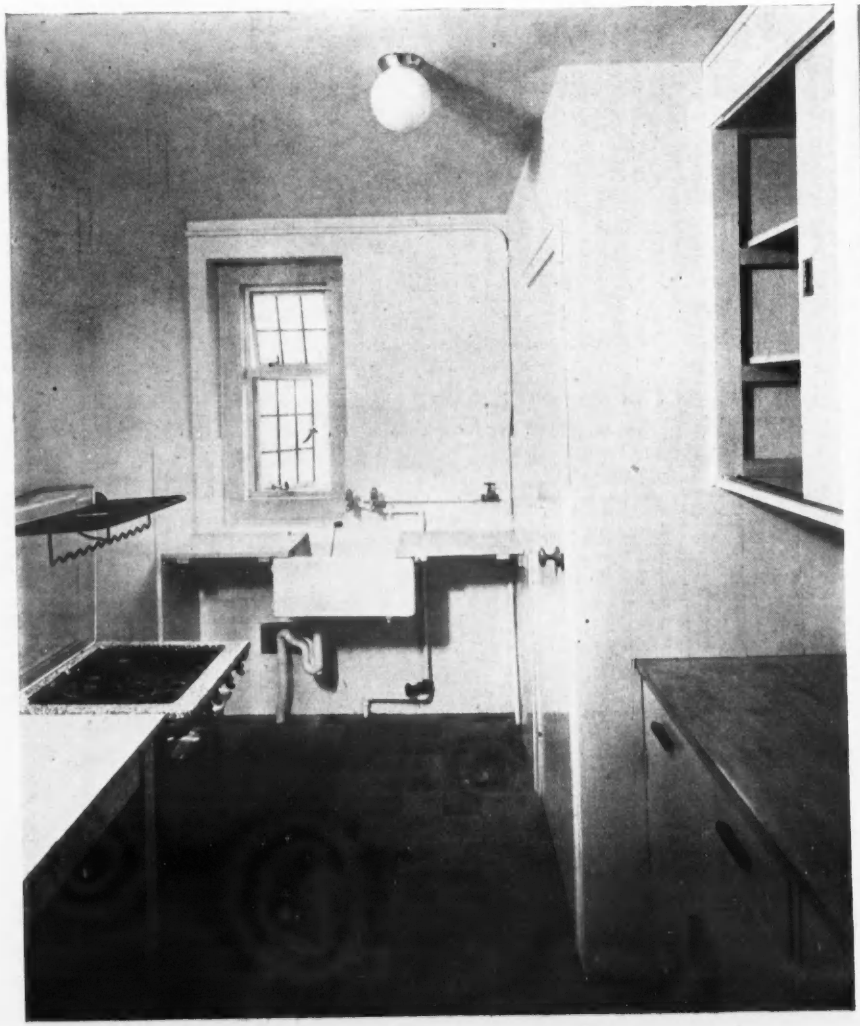
ONE of the most courageous building programmes to show results during the difficult years since the war is that sponsored by the Central Council of Church Training Colleges. Undeterred by the formidable cost of such a target, the Council has aimed, with the assistance of the Ministry of Education, under the terms of the Fleming Report, to bring the teachers' training colleges under its joint control up to a strength of students which will secure to each College the fullest advantages of economic administration and scholastic opportunity. The Council has further set itself to raise the standard of the accommodation provided to a general level which will ensure good and efficient working conditions, and which can be briefly epitomised in the change from the dormitories and cubicles of the nineteenth century to the individual study-bedrooms of today; this improvement is typical of the whole trend which will be found reflected in all the other departments of the collegiate organism.

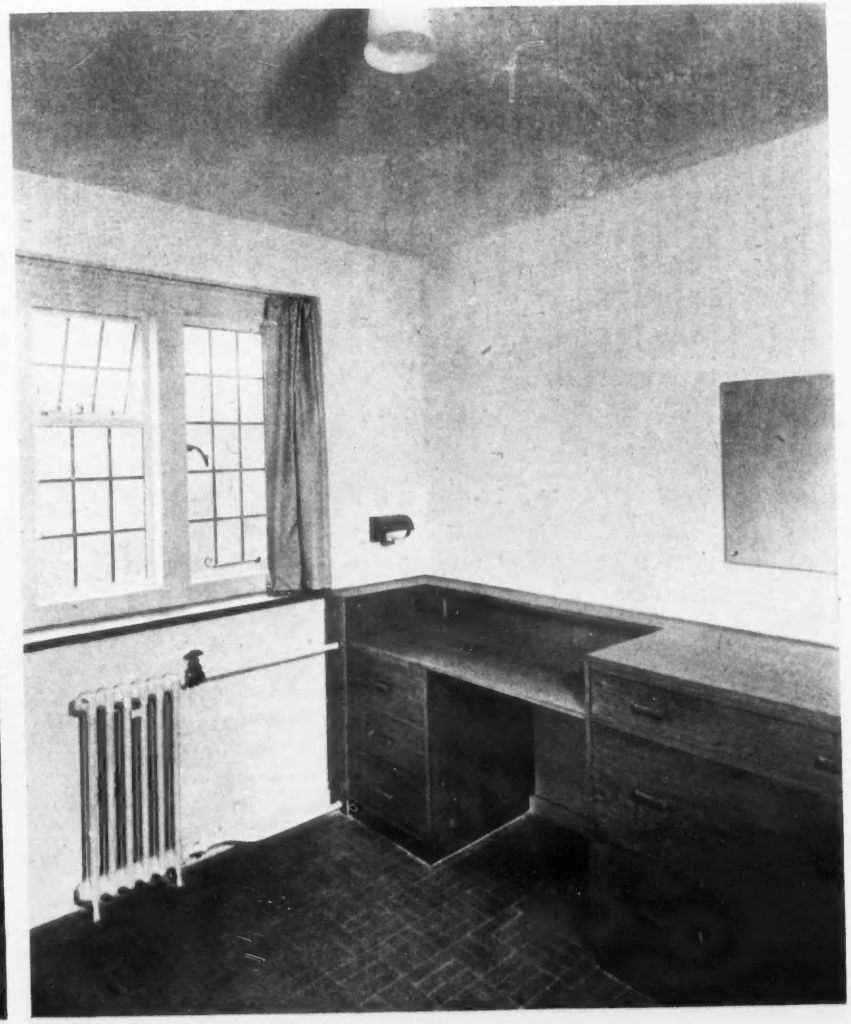
In laying the plans for such an ambitious programme as this it was natural that those Colleges which had been damaged by enemy action should receive some priority of treatment, and to this St. Albans and Chelmsford Diocesan Training College for Women Teachers, at Hockerill, Bishop's Stortford, could well lay claim, having suffered the total destruction of a comparatively modern residential hostel with tragic loss of life.



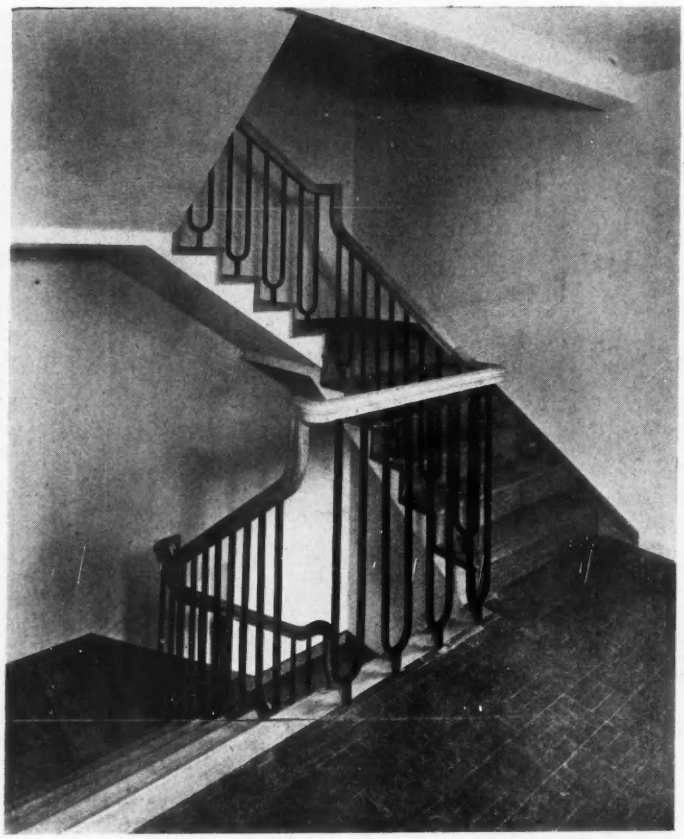
HOSTEL FOR WOMEN TEACHERS, HOCKERILL. Ground-floor plan.

(The blacked-in portions represent the new work.)





HOSTEL FOR WOMEN TEACHERS, HOCKERILL. *Left:* **Students' "personal service" room and pantry.** *Right:* **Built-in study-bedroom furniture.**



Detail of staircase.

Shortly after the end of the war, therefore, Lord Mottistone and Mr. Paul Paget were invited to prepare a master plan which might integrate the repair of war damage with the improvement of the surviving buildings and their extension, by successive stages, to accommodate an ultimate total of 300 students, as compared with a pre-war strength of 130.

The residential hostel here illustrated represents the first section of this scheme of permanent development to be completed, and consists in the addition to an existing property of accommodation on three floors for 36 students. The separate study-bedrooms are so sited as to relate the resulting block more closely to the main College buildings. Structurally the design of the new work is traditional in character, brick walls being wholly load bearing, floors of reinforced concrete, and the ceiling of the second floor being constructed of metal lathing spanning between a steel joist grid at roof plate level, from which the twin apex timber roof is pitched.

The earlier work of the adjoining buildings determined to some extent the texture and colour of the elevations, if not their design, and in this connection the architects were fortunate in securing from Messrs. Williamson, Cliff, Ltd., at a time when the range of selection was notoriously restricted, facing bricks and sand-faced roofing tiles which harmonise admirably, in slightly cooler shades of brown than the original.

A feature of functional use which lends local colour to the back elevation is the projecting dormer, recalling the grain hoists of many Essex flour mills; in this case its purpose is to facilitate the clearance of snow from the central roof space, a provision suggested to the architects by the winter of 1946/47, when the designs were on the drawing board.

The accompanying plan and photographs give a good idea of the scale and standard to which training college hostels nowadays aspire in the matter of equipment and ancillaries. Upon the recommendation of the Ministry of Education baths are provided at a rate of one to five students; such ample and accessible facilities for bathing as these might well come as a pleasant surprise to those who trained for their profession in one of the older universities. Lavatory basins, even more lavishly supplied, being shared by only two students each, are in curtained cubicles, and for ease of maintenance and cleaning are generally preferred to " running water " in study-bedrooms. In the present instance these " ablutions " are grouped on each floor around a plumbing duct which ensures easy access to the pipework. Perhaps more valued by the students than any other provision are the personal service rooms which are provided on each floor for the preparation of snack meals. A carefully planned and equipped laundry suite is on the second floor, where washing, drying and ironing rooms occur in convenient sequence. The supervision of the Hostel is the responsibility of two members of the teaching staff whose study-bedroom suites, with private bathrooms, are to be found on the ground and first floors.

An open well staircase in pleasant natural oak with a wrought-iron balustrade gives access to all floors in the new building, including the roof space, where ample storage for students, luggage supplements the boxrooms, linen and general purpose cupboards on the floors below. Advantage has been taken of the more ample proportions of the adjoining premises, with which the new hostel directly communicates, to provide a students' common room within easy reach of all the study bedrooms.

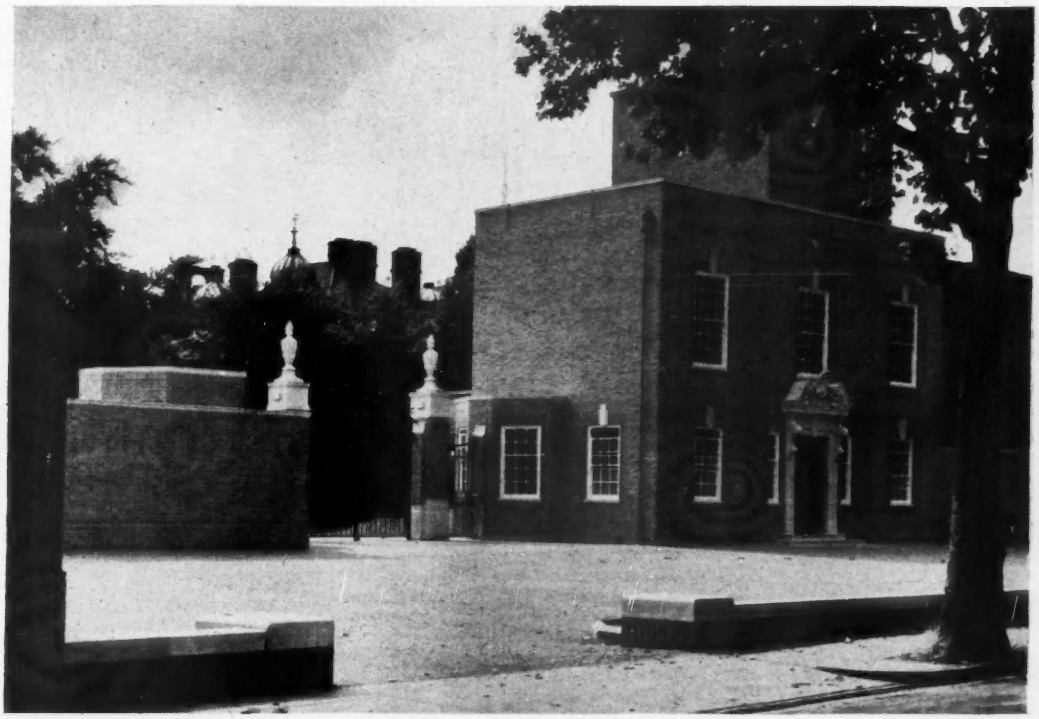
As to the furnishing of the study bedrooms the governing body in this instance opted most strongly in favour of built-in fitments, and these include a fixed desk with nest of drawers, bookshelves, dressing chest and mirror, wardrobe cupboard and cupboard for the storage of school equipment—all finished in oak-faced plywood. It is a debatable point whether this arrangement is the best, or whether a greater variety of movable furniture for individual disposition is to be preferred. At the time of completing this project, however, it is certain that the purpose-made fitments represented better value than could be obtained from a selection of utility pieces separately purchased.

The quantity surveyors were Messrs. Horace W. Langdon and Every, and Messrs. E. J. Cook and Co., Ltd., were the engineers. The general contractors were Messrs. Kerridge (Cambridge), Ltd.

The sub-contractors included: J. Wontner-Smith, Gray and Co., Ltd., heating engineers; The Bower Engineering Works, Ltd., electrical engineers; The Empire Stone Co., Ltd., artificial stonework; C. E. Welstead, Ltd., windows and glazing; Williamson, Cliff, Ltd., bricks and roofing tiles; Broadbent and Stephens, roofing contractors; Carter and Co. (London), Ltd., tiling contractors; The Granwood Flooring Co., Ltd., flooring contractors; Flexo Plywood Industries, Ltd., partitioning; Neuchatel Asphalte Co., Ltd., asphalters; John Bolding and Sons, Ltd., sanitary goods; D. Burkle and Son, Ltd., study-bedroom furniture; Thomas French and Sons, Ltd., curtain tracking; J. A. King and Co., Ltd., pavement lights; Comyn Ching and Co. (London), Ltd., ironmongery; The Trussed Concrete Steel Co., Ltd., metal lathing; W. A. Telling, Ltd., plastering; and J. Day and Son, stone carving.

HOSTEL FOR WOMEN TEACHERS, HOCKERILL

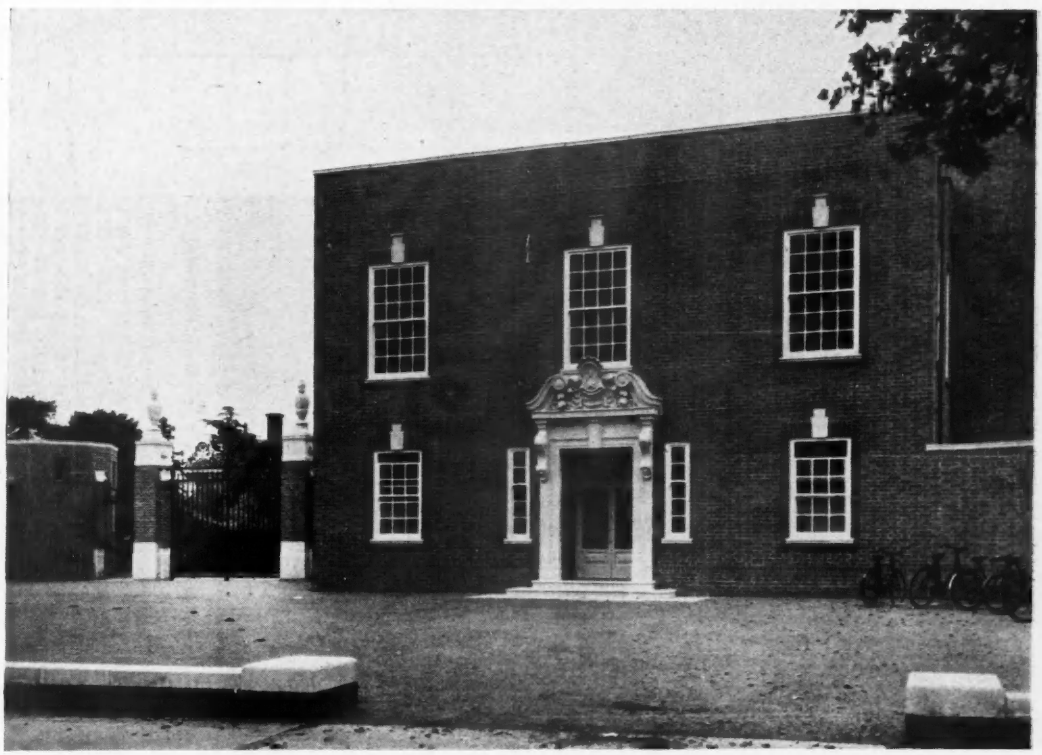
SEELY AND PAGET, ARCHITECTS



The new entrance and forecourt. *Below*: **Another view.**

NEW BUILDINGS FOR NEWNHAM COLLEGE, CAMBRIDGE

BUCKLAND AND HAYWOOD, FF.R.I.B.A., ARCHITECTS

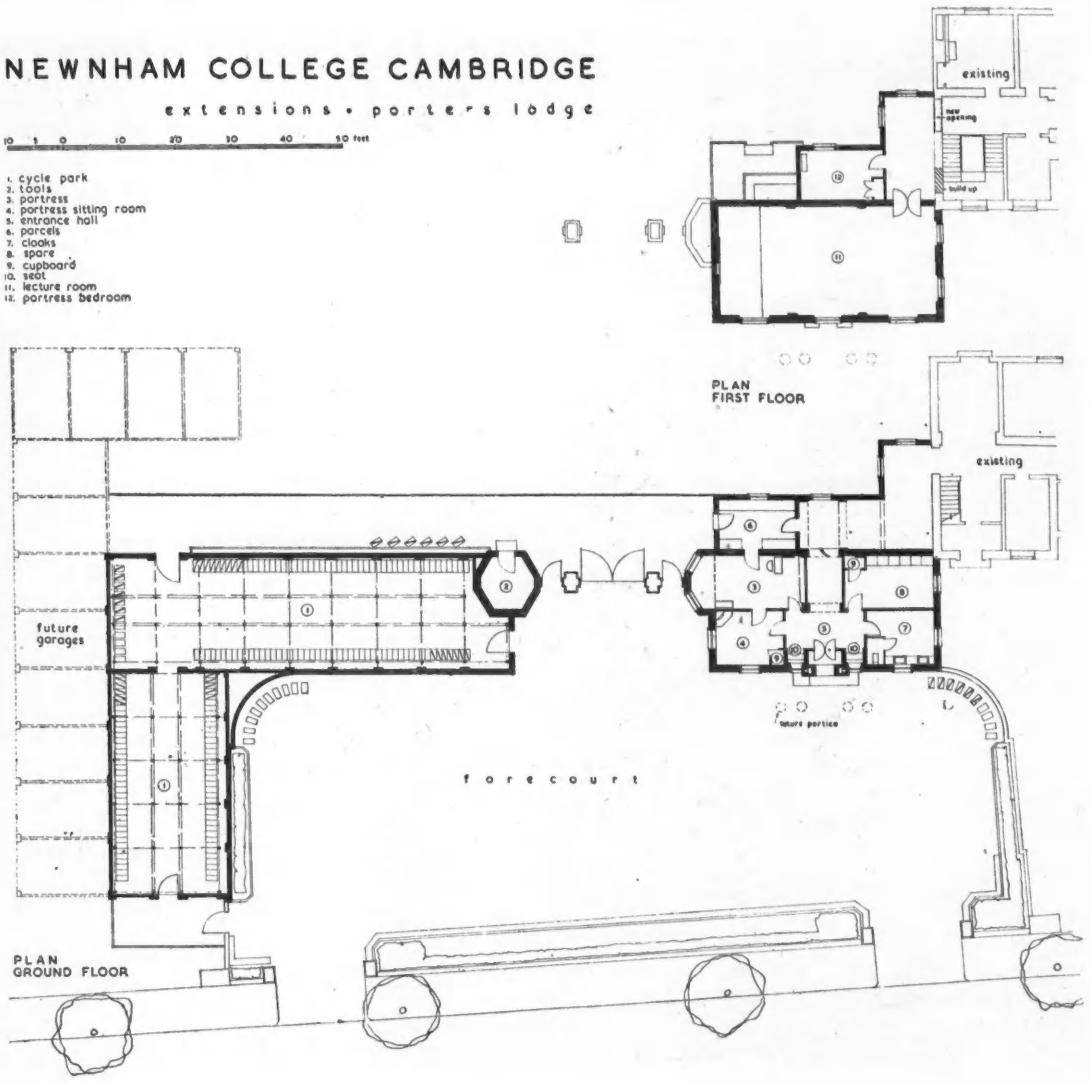


Principal entrance. The carving is by Mr. William Bloye.

THE original entrance to Newnham was part of "Old Hall" which was the first of the College buildings to be erected. Later extensions to the College have all been to the north and west, and the original entrance is no longer so convenient as a general approach. To remedy this, and to provide better reception facilities (including a general office, additional rooms for the portress, more adequate garage and cycle accommodation, and a more spacious approach

NEWNHAM COLLEGE CAMBRIDGE

extensions • porters lodge



for cars) a new building became necessary, and this, with the addition of a new lecture room, is now completed.

The elevations of the new entrance have been given a more traditional character than those of the " Fawcett " building with which it is directly associated; nevertheless it groups well with the earlier work, repeating its simplicity of outline, and echoing its plain surfaces in the blank east wall which forms the platform end of the lecture hall on the first floor. The quality of the brickwork and its light golden colour are very attractive, and in no way clash with the silver grey of " Fawcett," but give warmth and distinction to the new entrance. The forecourt is paved with tarmac topped with twice washed and crushed gravel from the Hilton Gravel Co., which harmonises remarkably well with the general colour scheme. The margins of the forecourt have been planted with a formal hedge of yew, and the somewhat unsightly boiler house and stack, which are only partly screened by the new wing walls, will eventually be screened by larger trees.

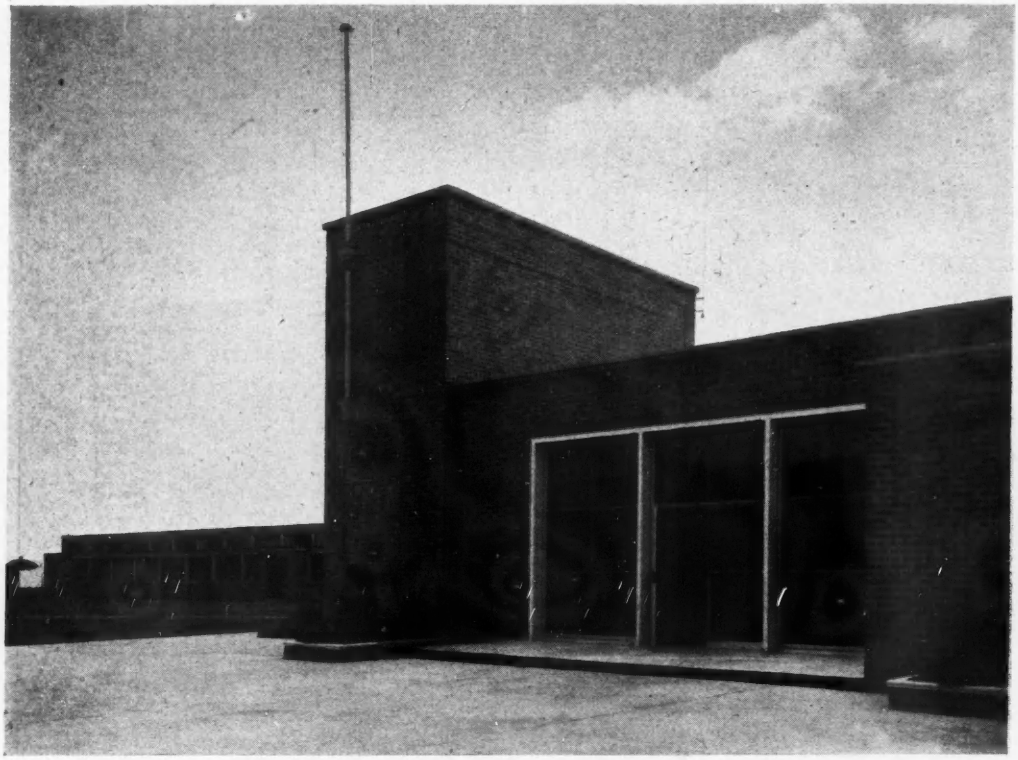
Portland stone has been used for the door architraves, copings, keystones, cills and urns, as giving a better foil to the golden brown of the brickwork than the fashionable Clipsham. The carving is from the studios of Mr. William Bloye, and the pediment carries the Newnham coat of arms. The gates are a particularly good example of craftsmanship in wrought-iron and repousse, designed by the architects and executed by the Birmingham Guild, Ltd. At present they lead nowhere in particular, but they will eventually give access to a new road linking Sidgwick-avenue with Newnham Walk and the gardens for which Newnham is so well known.

The quantity surveyors were Messrs. Reuben Holbrow and Partners. The general contractors were Messrs. Kidman and Sons, Ltd., Cambridge, and specialists and sub-contractors were: Hope's Heating and Engineering, Ltd., heating; Rowe Bros., Ltd., sanitary fittings; Couzens and Brown, electrical consultants; B. French, Ltd., electrical engineers; Kleine Co., Ltd., suspended floors; Walker and Wood, door furniture; and Val de Travers, asphalt.

NEW BUILDINGS FOR NEWNHAM COLLEGE

BUCKLAND AND HAYWOOD, FF.R.I.B.A., ARCHITECTS

The main gates, given by a member of the College.

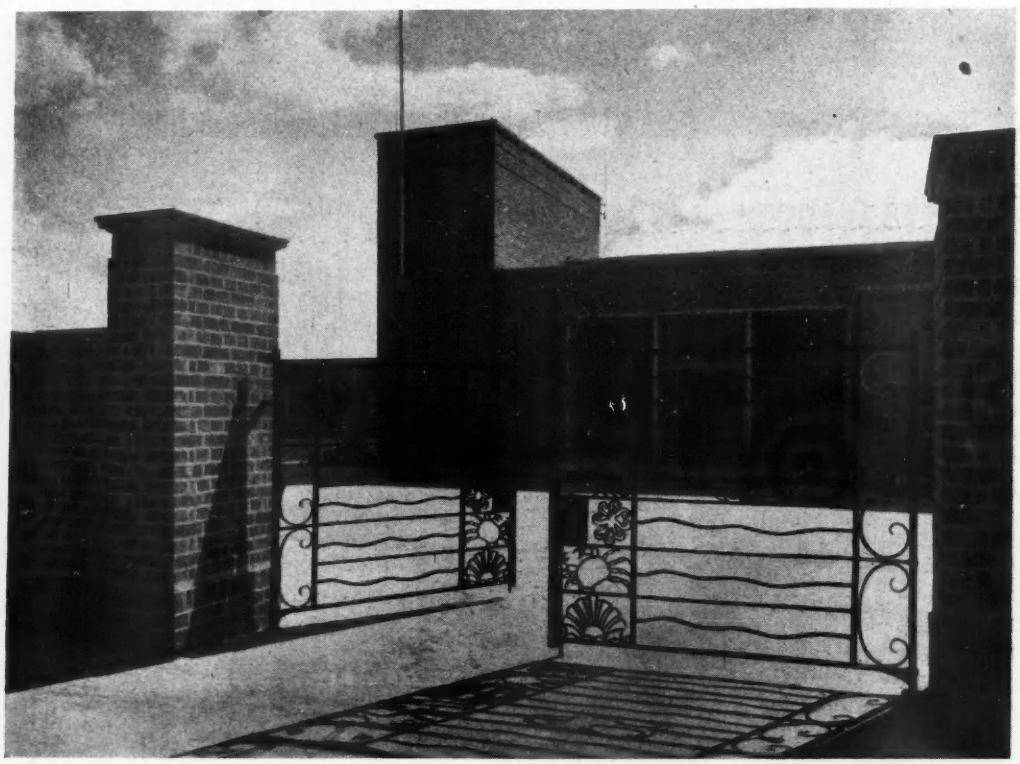


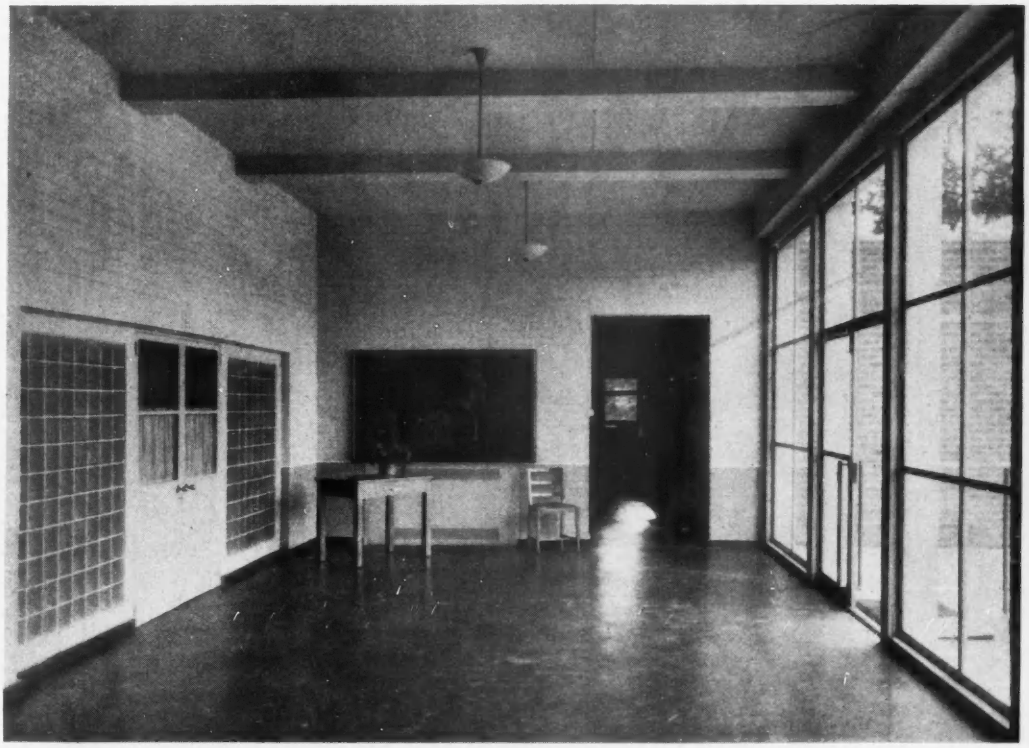
Detail of main entrance. *Below:* **Entrance gates, forged by local blacksmiths.**

PRIORSWOOD PRIMARY INFANTS' SCHOOL, TAUNTON, SOMERSET

R. OLIVER HARRIS, F.R.I.B.A., SOMERSET COUNTY ARCHITECT

G. A. C. HAYMAN, A.R.I.B.A., AND L. MEW, A.R.I.B.A., ASSISTANTS IN CHARGE





The main entrance hall.

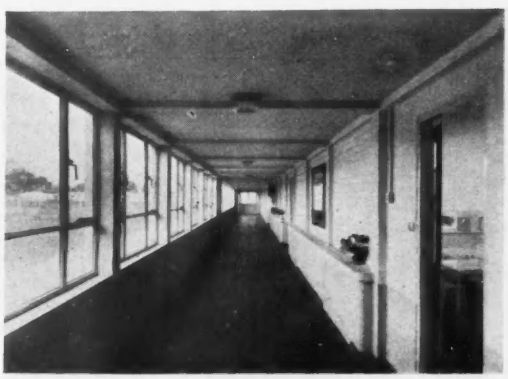
THE Taunton Priorswood Primary Infants' School, which was officially opened by the Rt. Hon. George Tomlinson, M.P. (Minister of Education), on November 16 last, is the first of the Somerset Education Committee's new post-war schools to be completed under the Ministry's urgent operational policy. Commenced in October, 1947, at a time when the national limitation of materials and labour imposed a severe handicap on building operations, this school has been designed on somewhat austere lines and should not be regarded as a prototype.

Although not of prefabricated construction—its main fabric being steel frame covered with 11 in. cavity walls—the school was completed in a matter of 77 weeks, and occupied at the beginning of May, 1949. It is recognised by the Ministry of Education as a four-class infants' school accommodating 160 children. The building has been planned in accordance with the modern practice with independent teaching, administrative and ancillary wings, each with its appropriate aspect and each capable of independent extension.

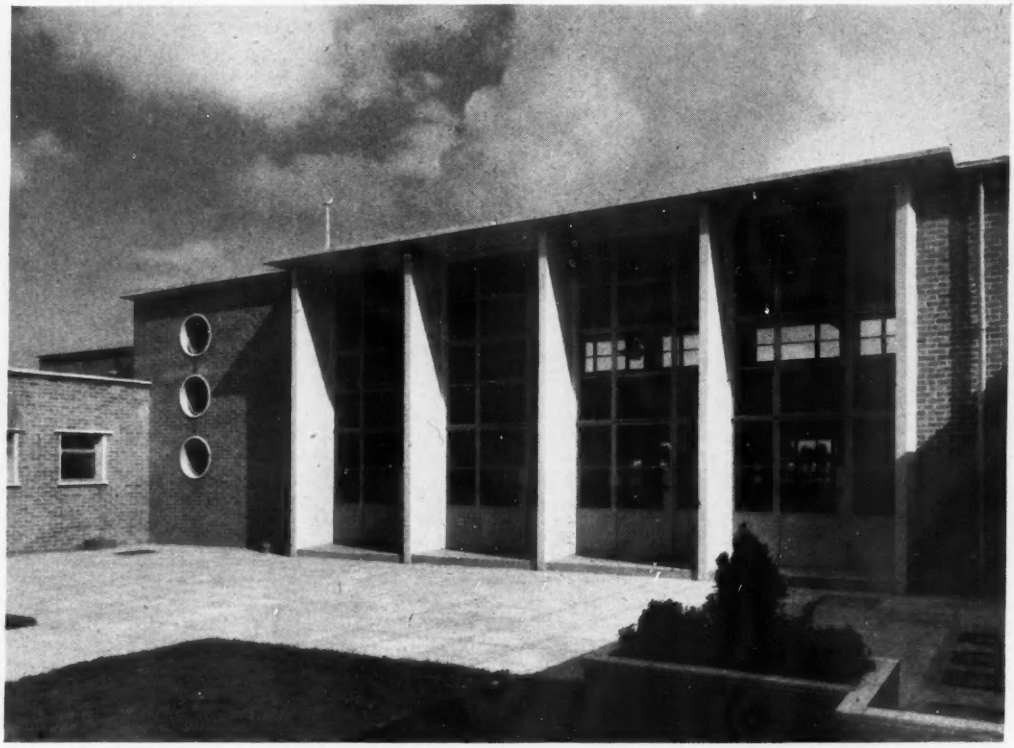
All the amenities of the Ministry's building standards then operating have been embodied, which include an open-air teaching terrace facing south-south-east, classroom fenestration with projecting canopy and fins to diffuse the glare of the south sun, and a separate meals service delivery yard. Hot and cold water is provided throughout and the central heating installation is concealed in flush convector radiator panels. The daylight and ventilation factors have been calculated in accordance with the Ministry's building regulations, and a bright and pleasant environment has been created throughout the school. To preserve this environment the building is decorated throughout in soft pastel colour shades. The assembly hall is provided with a low portable dais, and is also equipped for cinema projection. Wireless loudspeakers in the classrooms and assembly hall for school broadcasts are controlled from a master radiogram in the staff room.

The school was designed and executed under the supervision of Mr. R. Oliver Harris, F.R.I.B.A., Somerset County Architect. Mr. G. A. C. Hayman, A.R.I.B.A., and Mr. L. Mew, A.R.I.B.A., were the assistant architects in charge of the work. The contract has been carried out by Mr. Dudley Coles, public works contractor, Brookland Lodge, Bainbridge-avenue, Hartley, Plymouth, and the cultivation and planting of the grounds and approaches were undertaken by Mr. R. J. Case, horticulturist, Staplegrove Nurseries, Staplegrove-road, Taunton. The wrot-iron gates, designed in the County Architect's office, were forged by two blacksmith members of the Somerset Guild of Craftsmen, Mr. T. E. Boyce, The Forge, Pilton, Shepton Mallet, and Mr. H. Welland, Highbridge, Somerset.

The following is a list of the main sub-contractors: Sewage ejector, Ames Crosta Mills and Co., Ltd.,



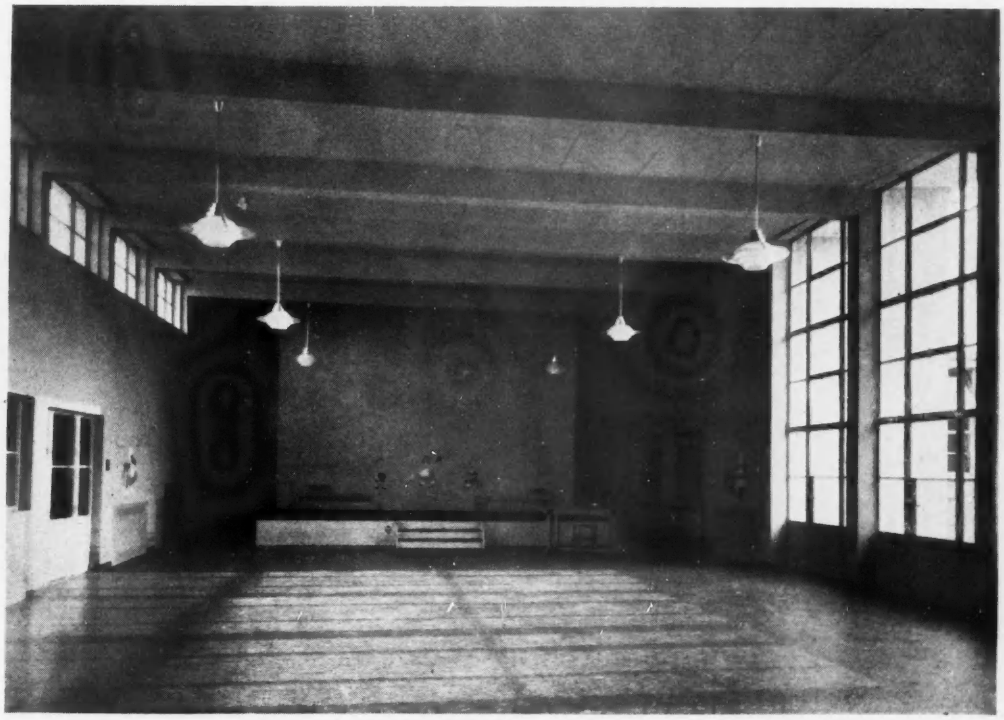
A classroom corridor.



Assembly hall exit and detail of fenestration.

Heywood; electrical services, Colston Electrical Co., Ltd., Bristol ; facing bricks, Taunton Brick and Tile Co.; steelwork, T. C. Jones and Co., London; metal windows, C. E. Welstead, Croydon; heating installations, Carter and Morley, Yeovil; " Paropa " roofing, Frazzi, Ltd., London; flooring, Granwood Flooring Co., Riddings, and Semtex, Ltd., Bristol; waterproofing, Brights Asphalt Contractors, London;

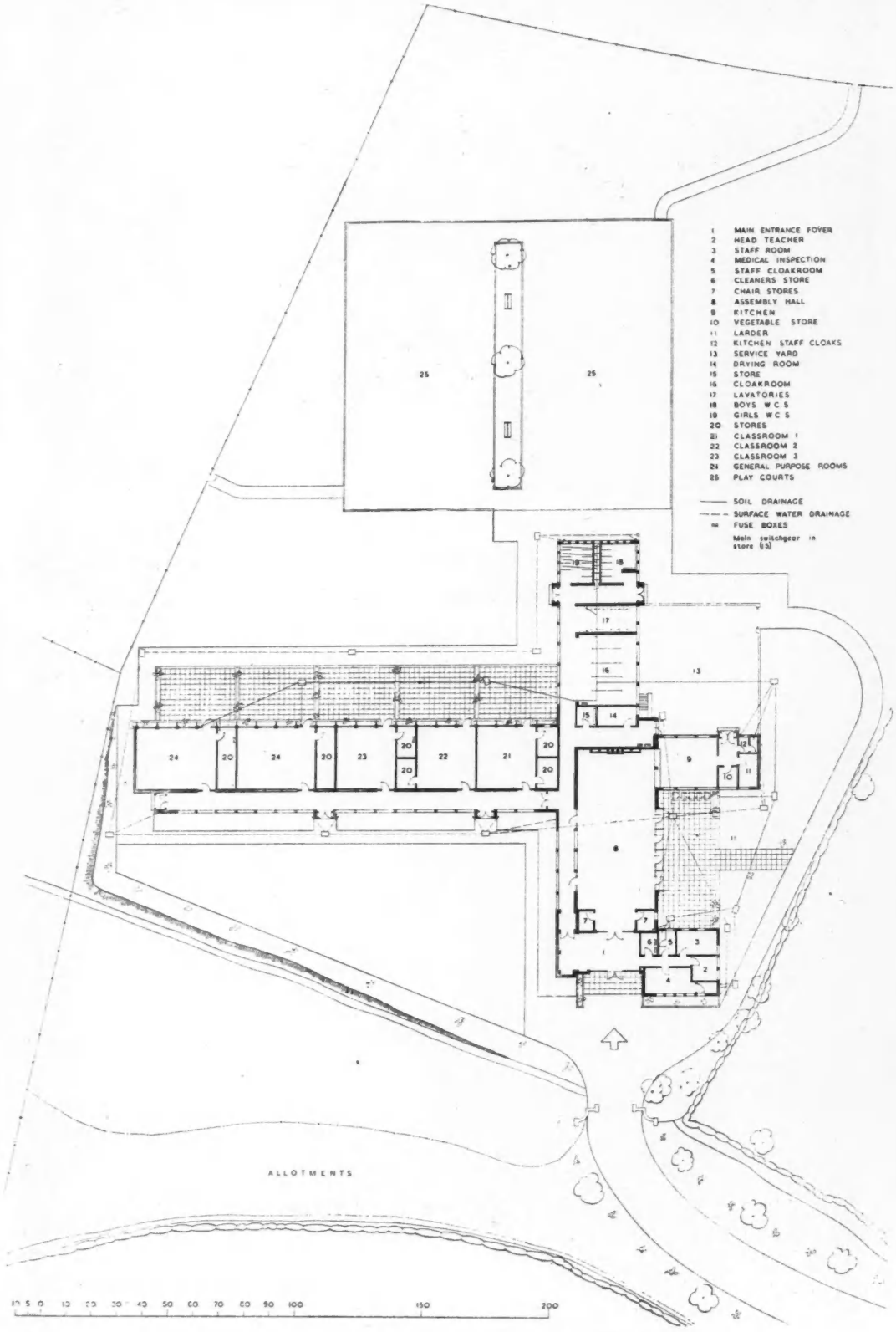
South-east elevation of classroom wing.



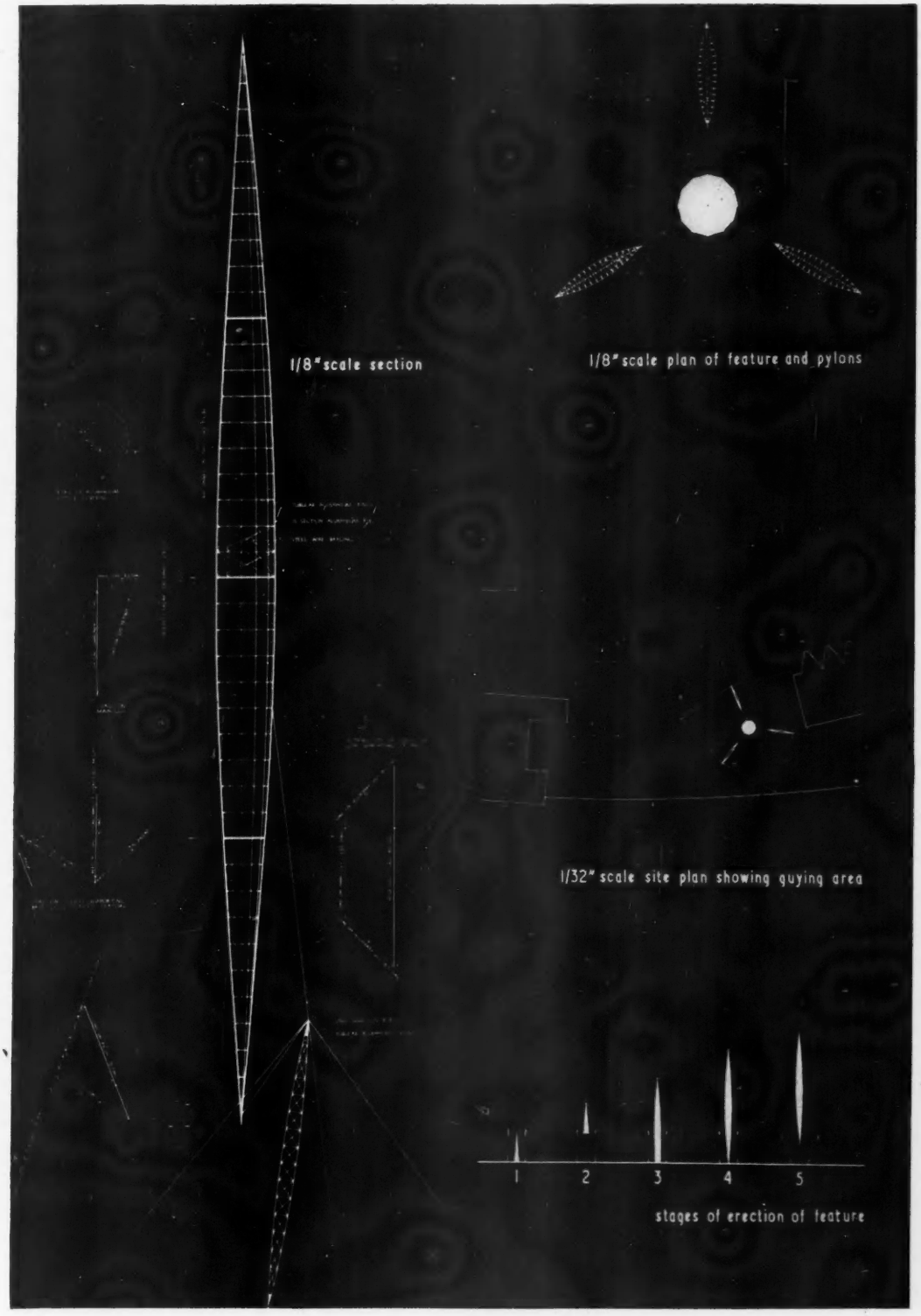
Interior of assembly hall.

precast roof and floor, Concrete, Ltd., Hounslow, and Bryco Products, Ltd., Taunton; glass domes, Pilkington Bros., Ltd., St. Helens; reconstructed stone, Wharf Lane Concrete Co., Ilminster; lavatory partitions, Flexo Plywood Industries, South Chingford; cloakroom fittings, A. Brown and Co., Birmingham, and sanitary goods, supplied by the Associated Clay Industries, Ltd., of London.

PRIORSWOOD PRIMARY INFANTS' SCHOOL, TAUNTON. A typical classroom.



PRIORSWOOD PRIMARY INFANTS' SCHOOL, TAUNTON: The plan.



COMPETITION FOR A VERTICAL FEATURE ON THE SOUTH BANK, FOR THE FESTIVAL OF BRITAIN, 1951

WINNING DESIGN: POWELL AND MOYA, AA.R.I.B.A., A.A.DIPLS., ARCHITECTS

Night impression.

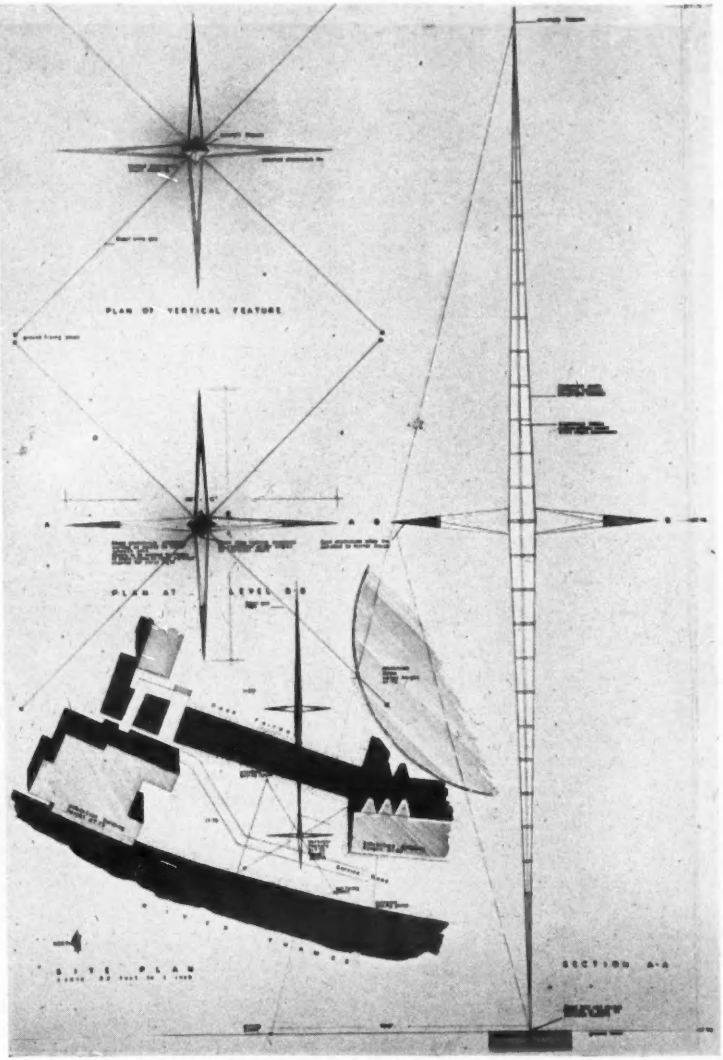
WINNING DESIGN: POWELL AND MOYA, AA.R.I.B.A., A.A.DIPLS., ARCHITECTS

ILLUSTRATED in these pages are the designs placed first and second in the competitions organised by the Festival of Britain, 1951, for (a) a Vertical Feature, and (b) a Restaurant. The assessors' awards, reports and summaries of the reports of the winners are printed on page 42.

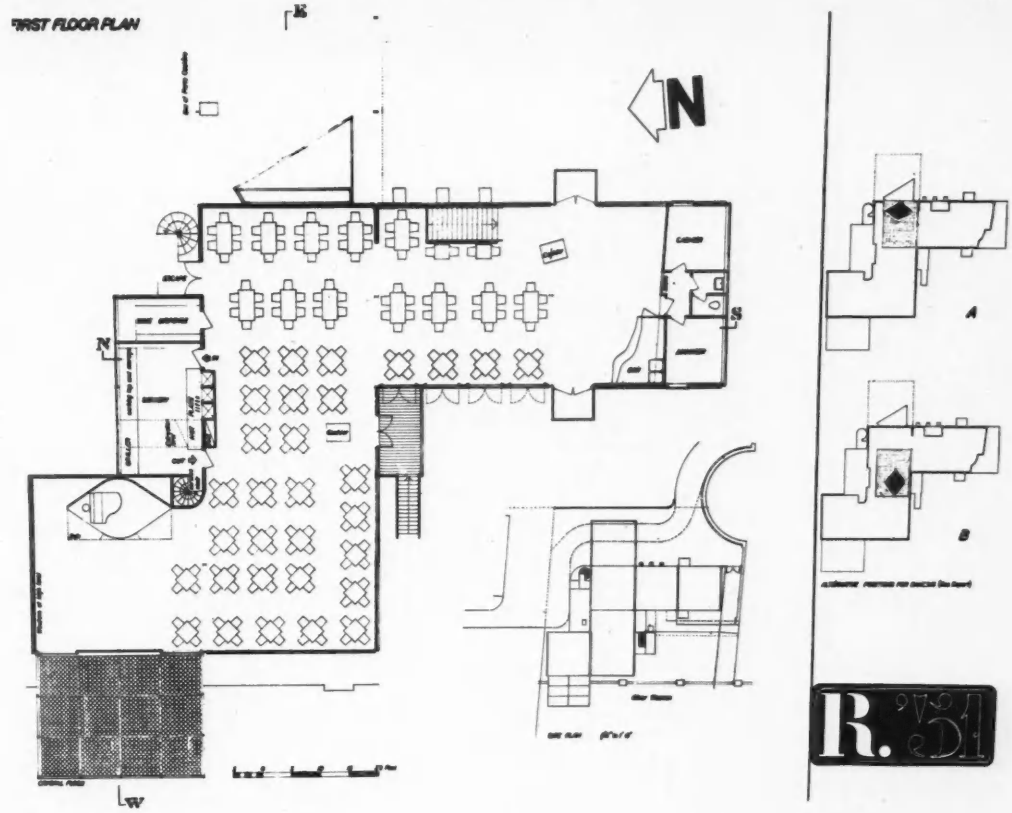
VERTICAL FEATURE.—The winning design shows a 12-sided aluminium frame, 250 ft. high and 14 ft. wide at the centre, tapering in a curve to each end. It will be poised 40 ft. above the exhibition suspended in a cradle of steel cables supported on three pylons. It will be illuminated from the inside at night. Full consideration has been given to the engineering problems.

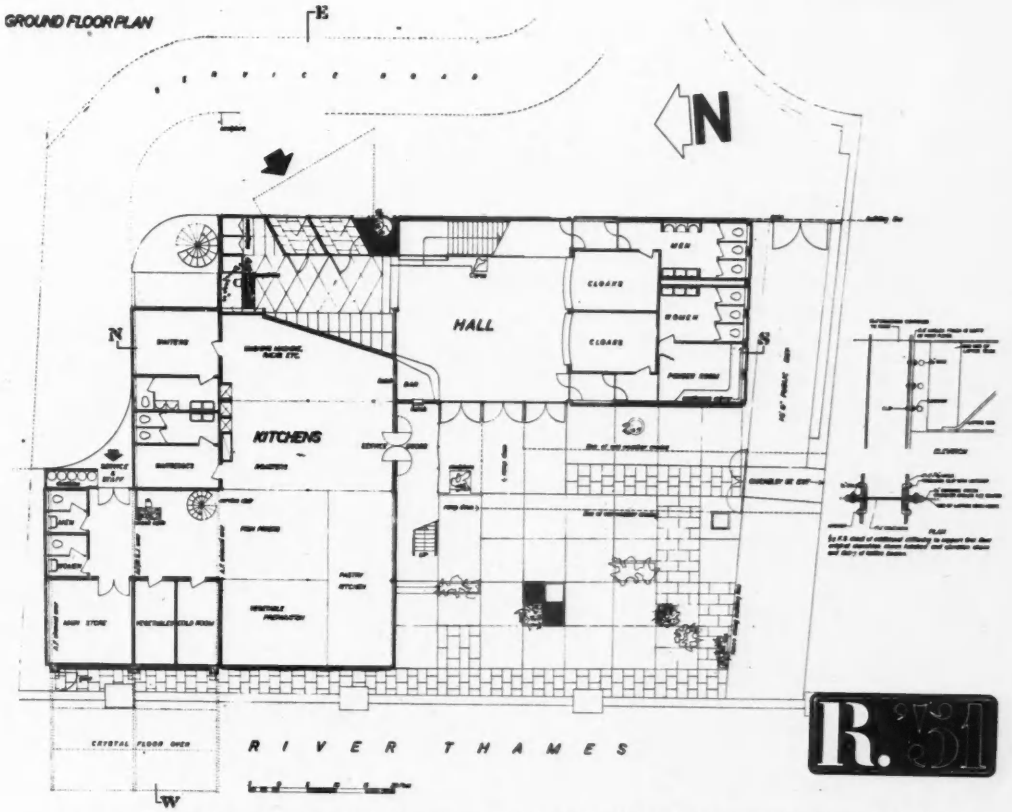
RESTAURANT.—The structure of the winning design will be built entirely of Dutch barns, but with a portion cantilevered over the river. External walls will be mostly glass, except on the north.

COMPETITION FOR A VERTICAL FEATURE ON THE SOUTH BANK, FOR THE FESTIVAL OF BRITAIN, 1951



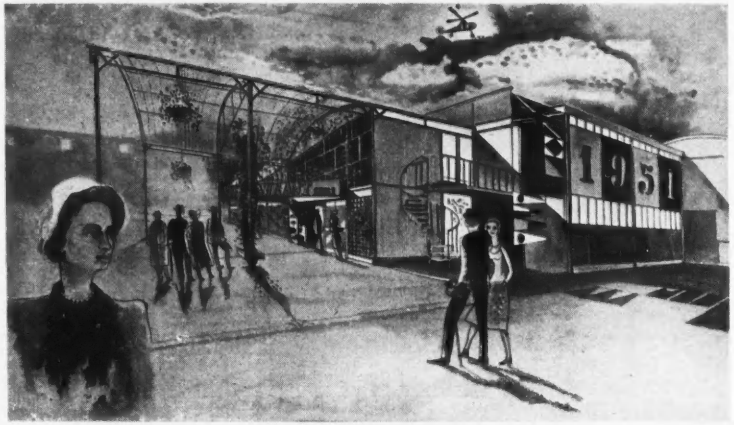
DESIGN PLACED SECOND: By JAMES S. COUSINS, A.R.I.B.A.



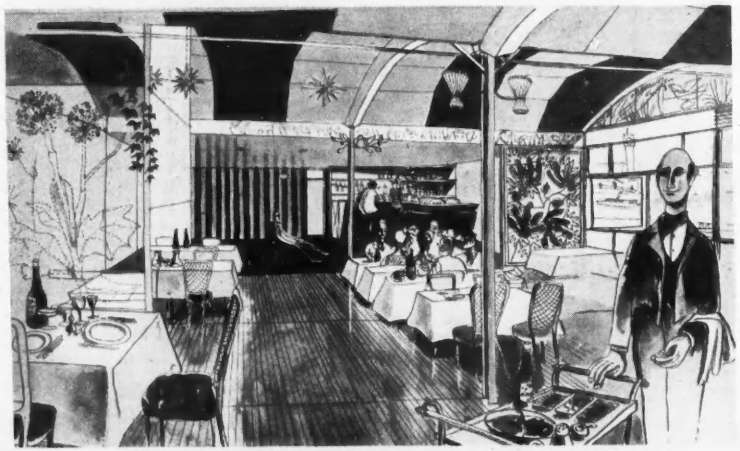


COMPETITION FOR DESIGNS FOR A RESTAURANT ON THE SOUTH BANK, FOR THE FESTIVAL OF BRITAIN, 1951

WINNING DESIGN : LEONARD MANASSEH, A.R.I.B.A., ARCHITECT

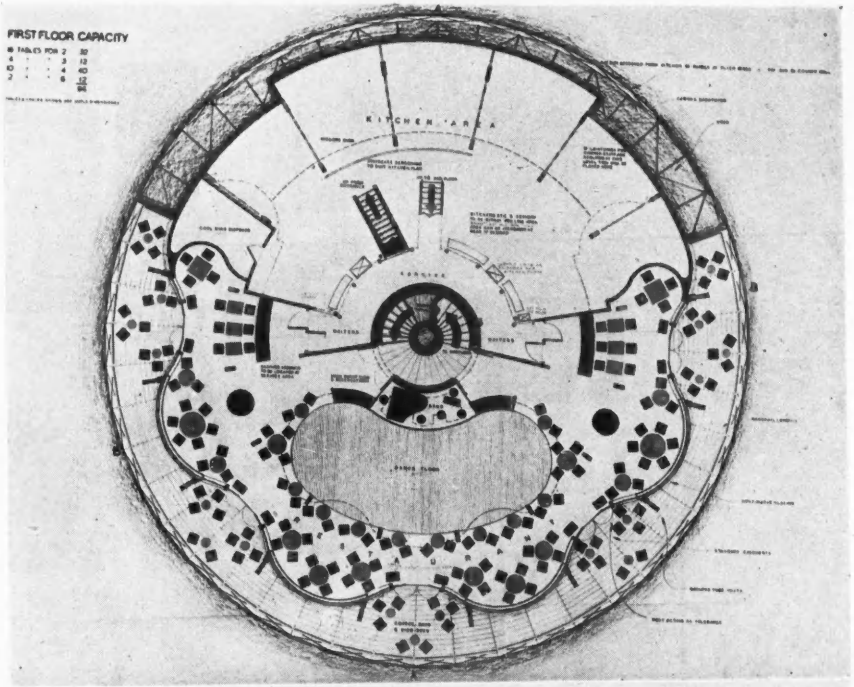


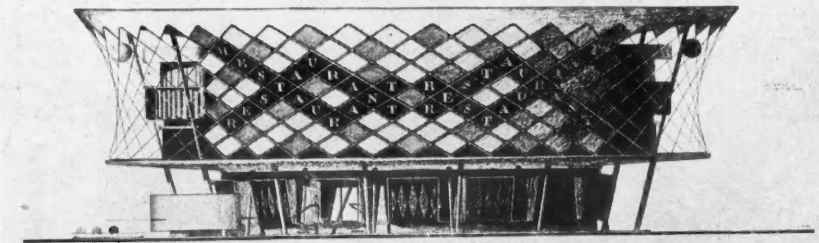
Exterior view of Restaurant.



Interior view.

WINNING DESIGN: LEONARD MANASSEH, A.R.I.B.A., ARCHITECT





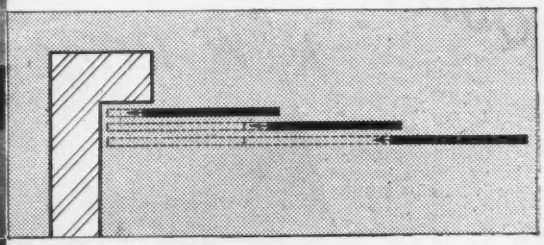
DESIGN PLACED SECOND: By PATRICK GWYNNE

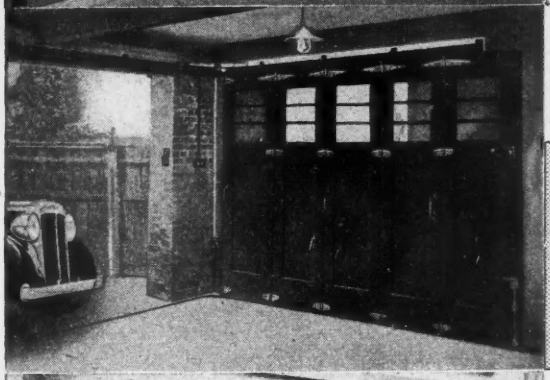
COMPETITION FOR DESIGNS FOR A RESTAURANT ON THE SOUTH BANK, FOR THE FESTIVAL OF BRITAIN, 1951

WINNING DESIGN: LEONARD MANASSEH, A.R.I.B.A., ARCHITECT

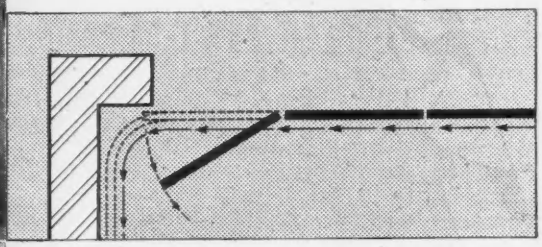
COMPETITION FOR DESIGNS FOR A RESTAURANT ON THE SOUTH BANK, FOR THE FESTIVAL OF BRITAIN, 1951

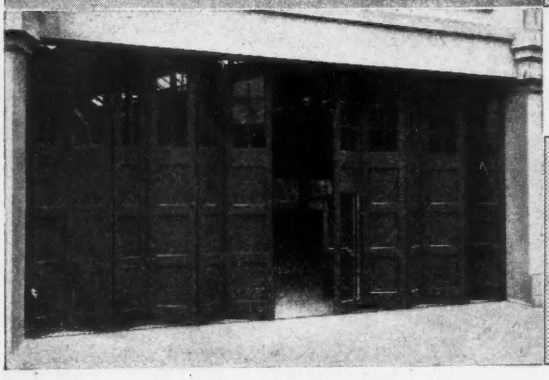
Should they simply slide?



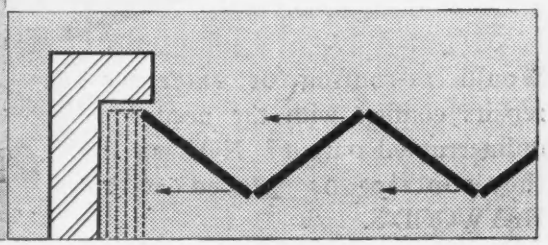


. . . slide round the corner?





. . . or slide and fold?



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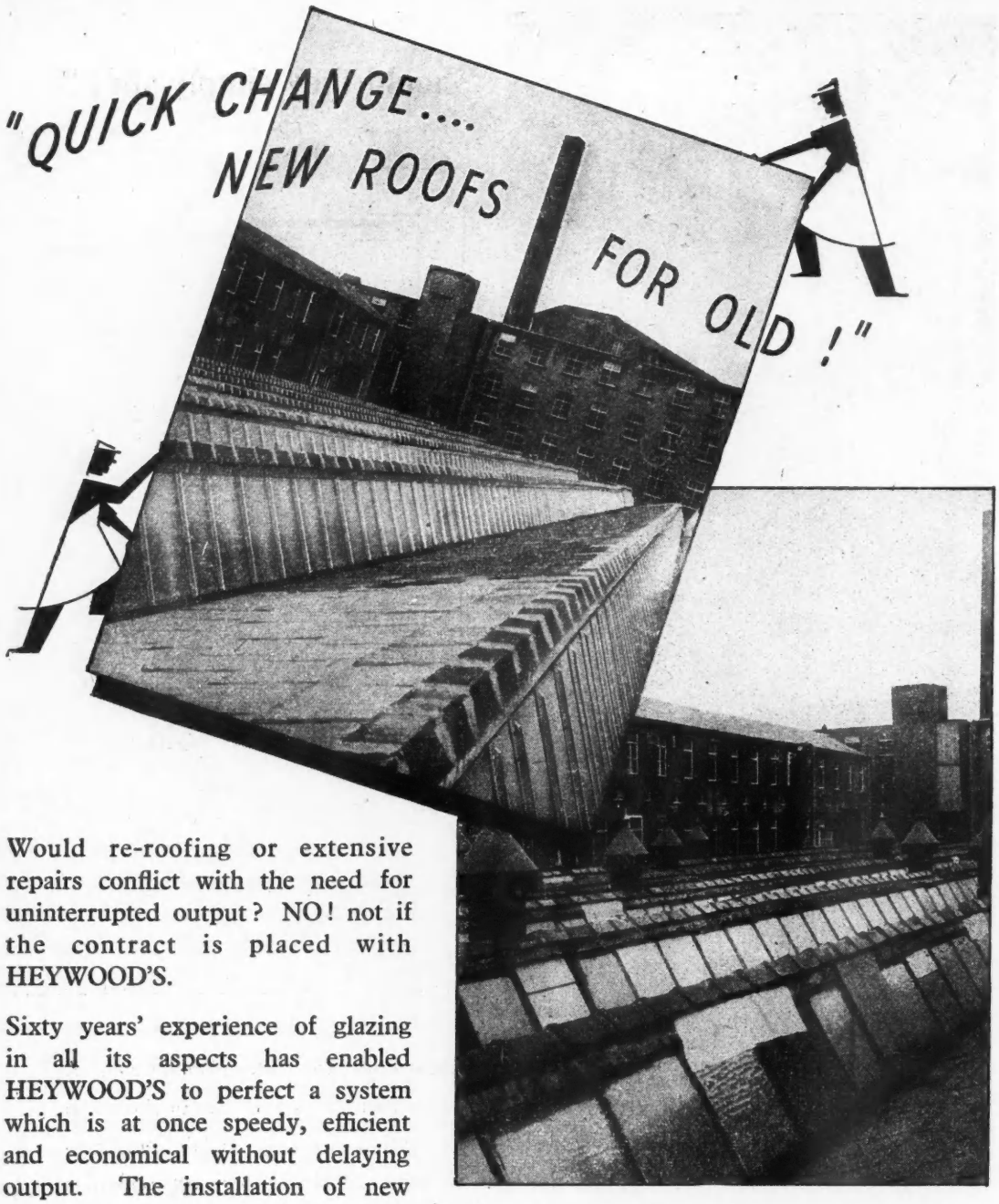

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CONCERT HALLS

Mr. Hope Bagenal's Address to R.I.B.A.

COMMENTS on the types of concert hall likely to be required in the future and the importance of applying recognised principles of acoustics in their design, were made by MR. HOPE BAGENAL, D.C.M., F.R.I.B.A., in a paper read at the Royal Institute of British Architects on January 3.

Mr. Bagenal began with a survey of present-day circumstances and we take the following extracts from his remarks:

In the early seventies of last century a period of heart-searching in acoustics began, and H. Heathcote Statham, F.R.I.B.A., musician and architect, and later editor of *The Builder*, read a paper before this Institute called "Architecture practically considered in relation to Music." This is to-day a useful contribution. He recommends the regular hall type with a good slope or "ramp" for floor seats and points to the old Exeter Hall as a model. He also recommends the use of a floor reflector in front of the platform and shows an interesting plan of his own embodying these recommendations. Later, in 1899, in a "Note on the Planning of Concert Rooms," he warns against the danger of the curved rear wall, and again recommends the ramped floor. "Most of our concert rooms," he said, "are an expansion of the old ballroom model with a flat floor for dancing and promenading and an orchestra for the players up above and out of the way."

This takes me at once to the heart of the subject from a design point of view. It is still the complaint of the acoustic expert and of the informed architect. To-day in this country the number of public halls designed primarily for musical tone—halls in which music *rules*—are few. It is the town hall, the assembly rooms, the college hall, which provides the general music auditorium, and there the flat floor rules—the flat floor for dancing, banquets, exhibitions, and much else besides, and so we must classify. The first and by far the more numerous class is the "General Purpose Hall." The second is the concert hall proper.

As to the first: under the Local Government Act, 1948, Sec. 132, local authorities are authorised to provide entertainments and charge the cost to the rates up to an amount not exceeding the product of a rate of sixpence in the pound. This has not quite dawned yet, but they are empowered to influence the home of our entertainment considerably. Couple with this the thoroughly bad auditorium performance of the older flat-floored town halls and we discover certain tendencies. We must anticipate the undertaking by local authorities of a small municipal theatre in addition to their large flat-floored hall, as at Wolverhampton, or the replacing of the older assembly hall with a better kind of "General Purpose Hall," as at Poplar.

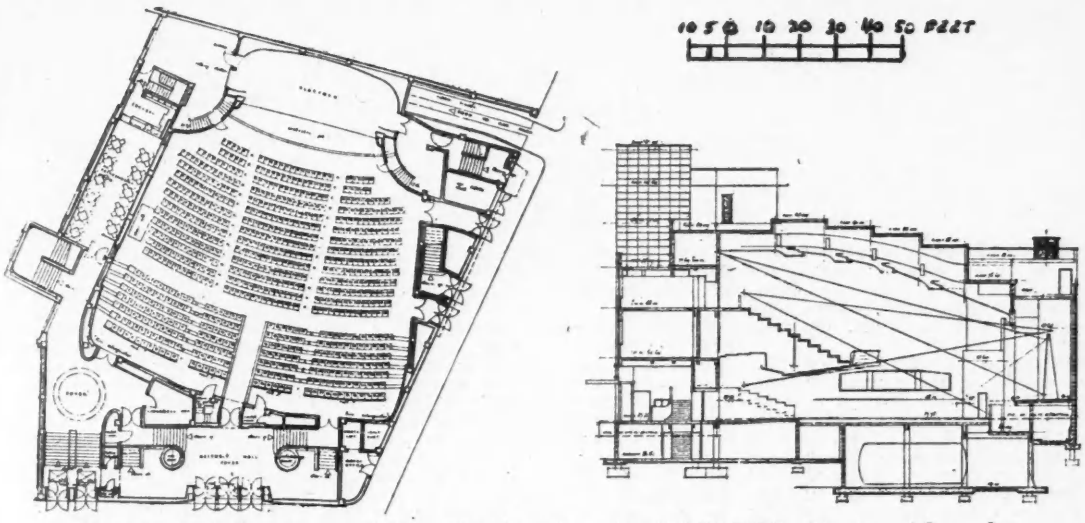
Questions of cost must weigh against two halls and we have to note in Poplar Town Hall, designed by Mr. C. E. Culpin (opened 1939), an attempt at a better compromise for a large hall. It is a theatre on plan and fan-shaped; the front half of the floor is flat for dancing, the back half ramped; and for music there is a bow-shaped fore-stage able to take violins and soloists in front of the curtain line. I cannot pursue the "General Purpose Hall" to-night further than to make clear how music can be greatly helped by a wide proscenium opening (to be narrowed by curtains when required for drama) by a fore-stage for strings and soloists, and by a hard cyclorama, or white-washed rear wall, which can be illuminated, and will then dispense with a thick curtain as back cloth.

Taking the concert hall proper, there is no doubt that for some musical purposes we want the larger modern hall seating 3,000. But not for all purposes. This needs consideration. In discussing these problems we have before us the results of the useful meeting which took place in 1948, at the instance of the Acoustics Group of the Physical Society, at which acoustic men met musicians and critics and some consent was arrived at. I said then that owing to variations in loudness there was a real distinction to be drawn between the acoustic conditions suitable for classical music with forces of 40 to 70 on the one hand, and very loud modern works with forces of 119 or more and with full complement of brass on the other. The reason for this is a practical one. We want the right volume of sound for the right size of enclosure. The large hall is suited to the large and loud modern forces. But the smaller orchestra in a large hall loses power and loses touch, and will not easily communicate excitement.

Therefore, two sizes of hall are wanted for two acoustically different types of music, and that in all cases a deep overhang upon a flat floor is wrong, but especially for soloists and for violin concertos. Now this concerns architects acting as assessors. Trouble always springs from a building committee wanting to crowd too many seats on the site. Hence come about the long side galleries, the deep overhangs, the small cube per seat and the consequent too short reverberation when the hall is full. If we are to preserve our standards—let alone improve them—this tendency must be withstood. The practical answer on the confined city site is the opera house plan, in which relatively shallow tiers are placed one upon another and a good floor reflector sends sound upwards. A good example of the type is the Usher Hall, Edinburgh.

There is another important distinction to be recognised. It is in regard to musical taste, and it influences design. There are two broad schools—those who in all their preferences draw upon choral tone for a standard, and those who draw upon instrumental tone. The test is their attitude to tempo. The former will willingly go a little slower for the sake of "fullness" of tone—a something sustained; the latter must have rapidity with exquisite precision—they will not go slower—the enchantment is that of something infinitely organised moving at great speed. They want brilliance and sparkle rather than "fullness." Roughly speaking, the choral school prefers the older type of hall with a longish reverberation, such as the old Liverpool Philharmonic, the St. Andrew's Hall, Glasgow, and the old Colston Hall, Bristol. The instrumental school prefers the new Liverpool Philharmonic, the Usher Hall, Edinburgh, and Covent Garden, in which flexibility, sparkle, the clear staccato, and a short reverberation are the characteristics.

On the questions of auditorium design and acoustics, the speaker invited his



POPLAR TOWN HALL. MESSRS. CULPIN AND SON, ARCHITECTS. The ground-floor plan of assembly hall and section through assembly hall.

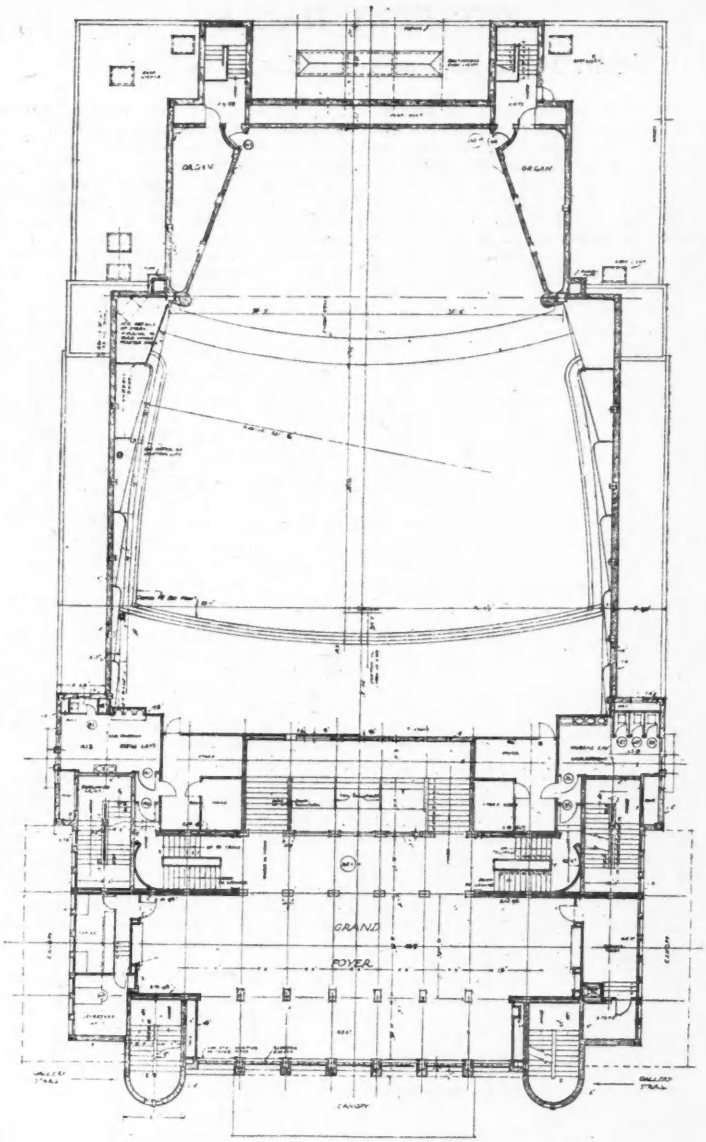
audience to consider the consents reached in the Acoustics Group meeting to which he had referred. The circular planned hall (called "annular plan") was condemned on a number of counts, he said. Next, the circular rear wall of long radius was noted as dangerous and to be avoided, but here they confronted a strong planning tendency, namely, to strike the seating lines on a fan-shaped plan from a centre on platform and follow these by curved risers, parapets, plinths, and finally by the rear wall. But this was asking for trouble. The one disabling defect was a return of slightly focused sound giving a "grunt" or "slap back" when a certain tempo was reached. An efficient absorbent could be put on a curved rear wall and there would still be an echo. If the fan was narrow it could quite well take straight riser lines. If a wide fan, the safest method was to have three straight facets for risers, and for rear wall, if possible, a long centre straight with breaks at each end. Both diffusing and absorbing treatments were easier to mount on straight facets than on a major curve.

Mr. Bagenal continued: In my view applied cylinders and convexities on a major curve are not an insurance against echo if the total reflected sound should be gathered back to front seats by smooth unbroken splay wall and ceiling surfaces. A good absorbent on straight facets and a breaking of side splays is the right treatment. The extreme risk is connected with long radius curvature: there is less risk in the horse-shoe or old Queens Hall plan where centre of curvature is well advanced. But in all smooth wall and ceiling curvature there is focusing and not distribution, and therefore some risk. This risk has been concealed in the past by the Baroque tradition of deep relief. "Theatre ornament" was functional, so was the column and break. But this tradition has gone and no equivalent safeguard has taken its place. Curved planning in the open air, that is not under a roof, is less risky.

On the positive side, we find a general acceptance of the desirability for good definition and for the ramped floor and well stepped seats as contributing to that end. There is no doubt that the existing very common platform seating arrangement which screens from the audience on floor the weakest instruments (violas and wood-wind) and exposes the noisiest (brass and percussion) is wrong. At the meeting referred to there was general acceptance of the new Liverpool Philharmonic hall as on the whole giving satisfactory definition. But Sir Malcolm Sargent wrote that it "was actually better at rehearsal." This means, of course, that it would be improved by a longer reverberation *when full*, and need not thereby lose definition. That is also my own view.

The evidence seems to point first to definition as the modern demand; and second that if, without sacrificing definition, we can give some fullness, some "choral" quality to strings, we ought to do so.

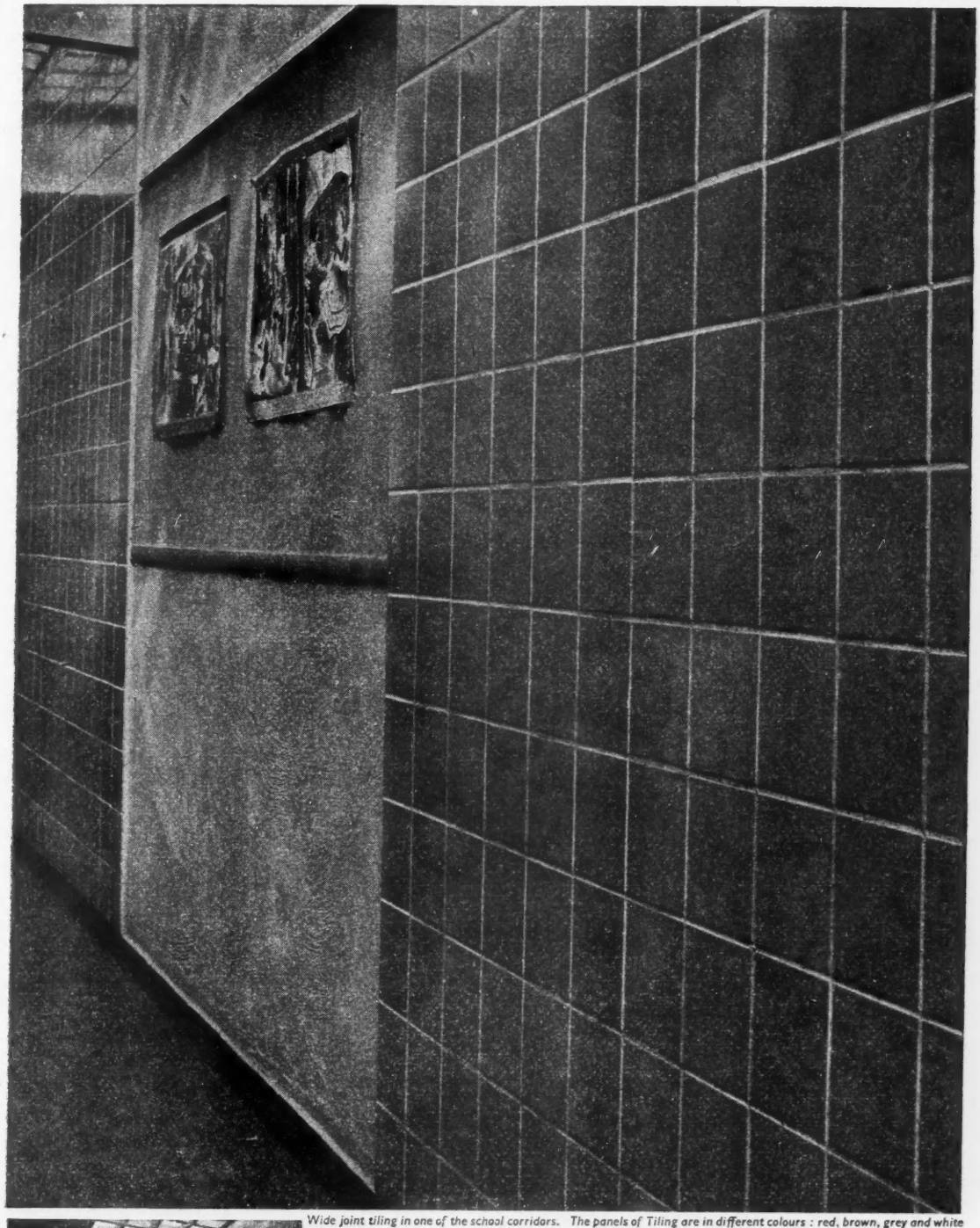
How then set about it? Of course, a large number of things weigh in practice. The site is the first. If a wedge or fan-shape is an obvious solution, then accept it with its disadvantages, and take measures against its risks. You will get good sight lines; you will get good sound reflectors outwards, but these reflectors will tend to gather returning sound. But you will not then get random inter-reflection with smooth reverberations:

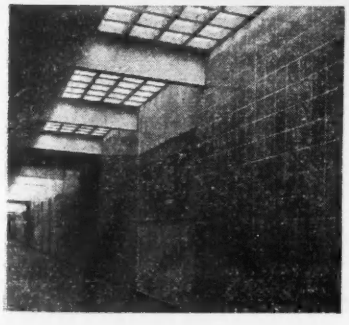


Grand foyer plan.
NEW PHILHARMONIC HALL, LIVERPOOL.
HERBERT J. ROWSE, F.R.I.B.A., ARCHITECT.

you are forced to provide, for safety's sake, theatre conditions rather than true concert hall conditions. On a confined city site a frank return to the opera house plan with superimposed shallow tiers going up high and a good floor reflector (Covent Garden in front of the safety curtain) is legitimate, but this, too, will have the theatre character acoustically. But if on the other hand the site gives you easily and naturally a good rectangle, then accept it. It, and not the fan, I believe to be the scientific shape for music. But resist the demand for over-seating which leads to heavily projecting galleries. A projection should not cover more than six or seven rows.

The cube per seat should be large—some 250 cu. ft. per seat or more—and this demands height: a good reverberation can then be had. (Dimensions of the old Liverpool Philharmonic by Cunningham are given as 102 ft. by 135 ft. on plan and 68 ft. high.) A city with a fine choral tradition, like many Yorkshire and Lancashire towns, is better served with a rectangular and more reverberant hall. Also I must point out that in London we have no large hall suitable for, or worthy of, the Matthew Passion Music and the B Minor Mass—that is to say, one giving modified church conditions, in which there is "fullness" of tone for the choir and also definition at moderate speeds so that the instrumental parts can be clearly followed. That double role is the test. The difficulty is that the long flat floor causing rapid loss of sound intensity over heads of audience will not give good definition for strings placed behind the platform front row, nor for wood-wind. If a rectangular hall can be given an efficient floor ramp, well and good. If not, and if floor seats on the flat extend in below the gallery,





Wide joint tiling in one of the school corridors. The panels of Tiling are in different colours : red, brown, grey and white

Architects : F. R. S. Yorke, F.R.I.B.A., E. Rosenberg, C. S. Mardall, A.R.I.B.A., 55 Welbeck St. W1
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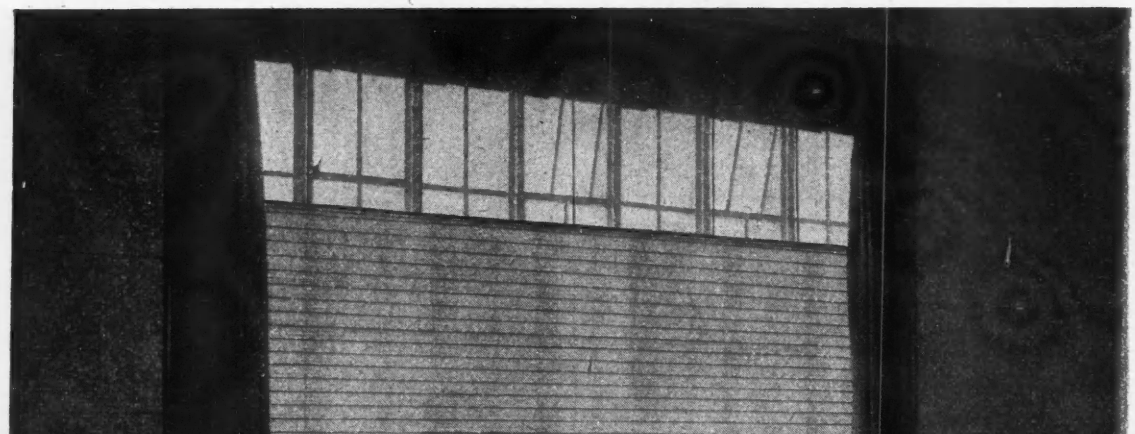

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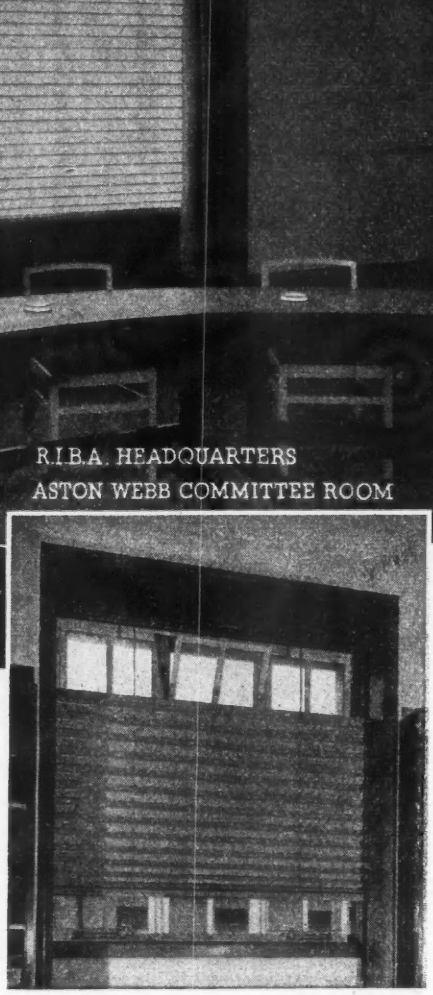

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then some shaping of the platform walls and ceiling, in order to give useful near reflections, becomes, in my opinion, essential. By suitable splays, enough reflected sound can be directed upon all rear seats to give an efficient increase in loudness. It is specially desirable thus to reinforce violas located on the centre flat, and all string tone, including the solo violin in concertos. But a canopy line should not constitute a large concave profile because of the danger of its collecting long path return sound and sending it to the platform as an echo. For this reason I recommend a canopy in a series of concave facets. This method has proved successful at the Glasgow Exhibition Concert Hall and in the Albert Hall.

In the matter of plan shapes, I believe the stepped plan will give both the opening out, and consequent larger seating, of the fan shape; it will also give random reflections and consequent free reverberation, and does not ask æsthetically for the curved seat risers and curved rear wall. I therefore recommend this plan.

Platform Design.

The speaker then described various sound-absorbing and diffusion treatments and then went on to deal with the subject of platform design, and said :

Since conductors profoundly differ, the ideal platform should give maximum flexibility, and this aim has caused in America—as in the Kleinhaus concert hall at Buffalo—the wholly flat platform for all instruments. The conductor can then group them as he likes. But still the front row must screen the rows behind. In my time the complaint was always that 'cellos and double basses were not heard and had to be increased in number and, from that point of view, I approved the new arrangement by which the 'cellos were placed at the front, on conductor's right, where the second violins used to be. By this new arrangement the second violins now come on the left behind the first violins.

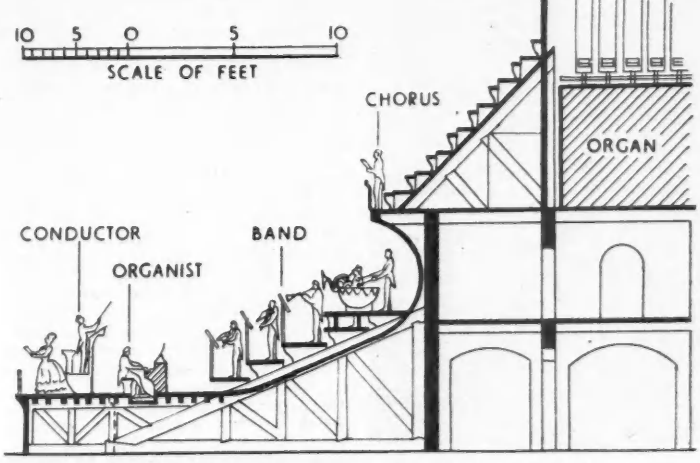
Now Heathcote Statham showed on his arrangement of platform—1899, and earlier—not only the violins divided but also the 'cellos and double basses, each of which were placed half on one side and half on the other. That was the nineteenth-century tradition. But it had a difficulty not disguised by Statham, namely the *ensemble* playing of the separated same instruments. But when a good *ensemble* was achieved this older method gives to the audience a balance of string tone now lost. One might sum up by saying that the new arrangement makes things generally easier for large forces on wide platforms.

From the designer's point of view the interchanging of 'cellos and violins, on a flexible stage, would mean the planning of adjustable risers. A pair of violins with stand occupies an area of 3 ft. by 4 ft.; but a pair of 'cellos with stand needs 4 ft. 6 in. (minimum) by 7 ft. 3 in. (Note that if sockets are provided along the nosings a shallower tread—4ft.—could be used.)

We should think of the platform plan really as a wide wedge with conductor at the apex. A conductor ought not to have to swing round through 180 degrees. From this has come the "bowed" or splayed front in the concert hall tradition. His desk should be movable because different conducting positions may be taken up as for a symphony, a choral work, a piano concerto. The choir staging should either be a curve with (roughly) the conductor as centre, or three tangential facets; the straight, or wide chord, is poor planning. It means that singers on extremities must turn from their scores and look half left or right. They need to look over their scores at him.

Now Heathcote Statham in his recommendations and designs insists on all the instruments being on risers and that the flat shall be kept clear. Clear except for conductor; soloists on a projection of their own in the front, and the organist at his electrically controlled console at the centre. There are two important things to say about this. First, this keeping the flat clear makes it a most useful floor reflector for violas and woodwind. And Statham adds a plea also for a parapet as a backing for the orchestra and to divide it from the choir. I am in favour of this myself; it can be seen at Birmingham Town Hall. But it interferes with flexibility. Second—"the organist," he says, "must always be placed below in front of the whole orchestra." And we have here the logic of the great nineteenth-century oratorio tradition. I believe that to-day a much smaller instrument is required.

We have here to face a fact perhaps as important as any other, namely, that owing to our general poverty choirs may want to experiment with works in large halls without an orchestra and with only the organ accompaniment, as is frequently done in churches. But then the position of the organ is important. They will not, in my opinion, want it behind them; but would far prefer it set further forward—as, for instance, above and behind the wall splays, or side screens, of the platform recess. It would be possible to get some 24-ft. opening above a 10-ft. plinth on each side, the instrument being divided. All this needs thinking out in the light of new requirements.



H. Heathcote Statham's arrangement of concert hall platform.

Concert Hall Lighting.

The speaker concluded with some remarks on concert hall lighting, and said: This has so much influence on function and design that we must glance at it. First the musical scores on players' desks must be well lit, but not over lit. Players must not be blinded under inquisitorial floods, as in the cinema studio; nor must they get a spot-light in the eye from the auditorium. Also the audience want to follow miniature scores, and to read the words, nor must this be ignored. What illumination is desirable? Some photometric standards are found in the I.E.S. Code. A recommendation of 7 foot candles is made for casual reading, and 15 for sustained reading. We also find that public halls and churches are put at 7 foot candles, presumably at desk level. Therefore 7 foot candles is ample for the audience, and less would serve. For platform lighting 12 to 15 foot candles at musicians' desks is desirable, although instances as low as 6 to 8 foot candles could be quoted. We here touch a matter of taste, namely, how far, while playing, to subdue the auditorium and bring up the platform. I personally cannot but recall the kind of lighting which one might call "homely." Hall and platform were unified by a series of lampshade pendants giving large luminous shapes under which our conductor, and our musicians, moved in a light that one might describe as *sub specie æternitatis*—music and lamplight and familiar figures mingling. The modern—more efficient—method is to use 1,000-watt arena lanterns with narrow-angle reflectors and with louvres. These, by restricting the area illuminated to some 27-ft. diameter, can give as much as 9 foot candles from a ceiling height of 80 ft. This method gives a powerful sourceless light, endowing the scene with impersonal interest, and leaving the walls relatively dark. Lower lights will permit of wider areas. This modern method can be regulated by dimmers.

Architectural Education in U.S.

A NATIONAL survey of architectural education, studentship and registration has started in the United States as a major project of the American Institute of Architects. The Institute's newly appointed Commission on Education and Registration, under the chairmanship of Dr. Edwin S. Burdell, Director of the Cooper Union, New York, has met at the University of Illinois to organise its work on the survey.

Described as an appraisal of the problems and responsibilities of the A.I.A. in the fields of professional education and licence to practice, the national study will provide facts on existing educational patterns, training procedures, registration requirements, and many related matters. The Commission is expected to require at least a year for its comprehensive fact-finding work and will make general recommendations on the basis of its findings.

The survey has been undertaken as the result of a report made early last year by Mr. Ralph Walker, of New York, President of the A.I.A.

SOME RECENT CONCRETE APPLICATIONS

FROM A SPECIAL CORRESPONDENT

STRUCTURES of concrete or reinforced concrete completed in the past year or two, or in the course of construction, include many that are interesting and some that are unique. Many blocks of flats, wholly in reinforced concrete or as reinforced concrete floors and frames clad with other materials, and houses of precast or cast *in-situ* concrete are, as readers of this newspaper are well aware, being erected in our cities and towns; but unprecedented constructional activity also prevails in the mountains of Scotland and Wales. For example, in central Wales there is in course of construction the largest concrete dam in this country, the Claerwen dam, which is being built to conserve water for the supply of Birmingham. This gravity-type structure is 1,066 ft. long, its greatest height is 184 ft., and its greatest width 180 ft., and will contain nearly half a million cubic yards of concrete made with low-heat Portland cement.

Electricity Stations.

In the Highlands, the numerous hydro-electric schemes are in various stages of construction and a few are completed, while others are nearly complete. All contain concrete in one or more of the main ancillary structures. Notably, there is the scheme at Loch Sloy, where the construction of a massive-buttress concrete dam, 1,160 ft. long, about 200 ft. high, and 165 ft. wide, and containing 200,000 cu. yd. of concrete, is well advanced. The power-house is some miles from the dam and is a steel-framed building with cast *in-situ* concrete walls and massive concrete foundations in which the intricate water channels are formed. A similar arrangement obtains in the Clunie section of the dual project of Tummel-Garry, where the dam (Fig. 1) and the power-house (Fig. 2) are some distance from each other. On the other hand, the installation at the Pitlochry section of this project is unusual in this country as the power-house is an integral part of the dam, the whole construction being in reinforced concrete. Associated with this scheme are concrete fish ladders 880 ft. long and rising 65 ft.

The provision of increased capacity for the generation of electricity in England is evidenced by the activity that continues to prevail in the construction of new steam-operated power stations in all parts of the country. Chimneys up to 350 ft. high, electrostatic - precipitator structures, bunkers, wharves, and hyperbolic cooling-towers up to 300 ft. high, all in reinforced concrete, are familiar adjuncts to these stations, the power-houses of which are generally of steel construction but have extensive concrete foundations. The concrete raft under the new power station at Hamworthy, near Poole (Fig. 3), contains 89,000 cu. yd. of concrete and is said to be the largest concrete slab in this country. The power-houses at Littlebrook, for example, and Skelton Grange, Sheffield, are reinforced concrete buildings, that at the latter (Fig. 4) being interesting as the turbine house is a reinforced concrete portal frame structure with a vaulted thin-slab (or "shell") roof. The part constructed first comprises 13 bays each 31 ft. long and 74 ft. wide, the greatest height of the roof above the level of the raft foundation being 88 ft. The columns support a concrete crane-rail beam for a 150-tons crane. The 3-in. concrete shell roof spans 74 ft. with ribs at 31-ft. centres.

In any brief survey of current construction, work in progress at the new steel works around Port Talbot, at Scunthorpe, and elsewhere must not be omitted. The vast amount of concrete in the foundations for the mills and other large buildings overshadows that in the auxiliary structures, many of which by themselves might be considered noteworthy. Some idea of the size of the buildings and their foundations is obtained from the fact that the building housing the slabbing mill, soaking pits, reheating furnaces, and strip mill at the new Abbey Works, Margam, South Wales, is three-quarters of a mile long and some parts of the ground floor are designed for loads up to 1 ton per square foot. The foundations at Margam comprise over 33,000 cast *in-situ* concrete piles.

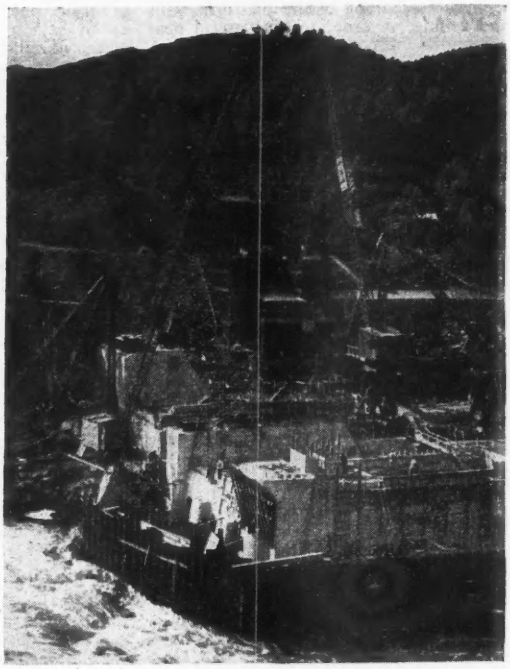


Fig. 1.—Clunie dam in course of construction.

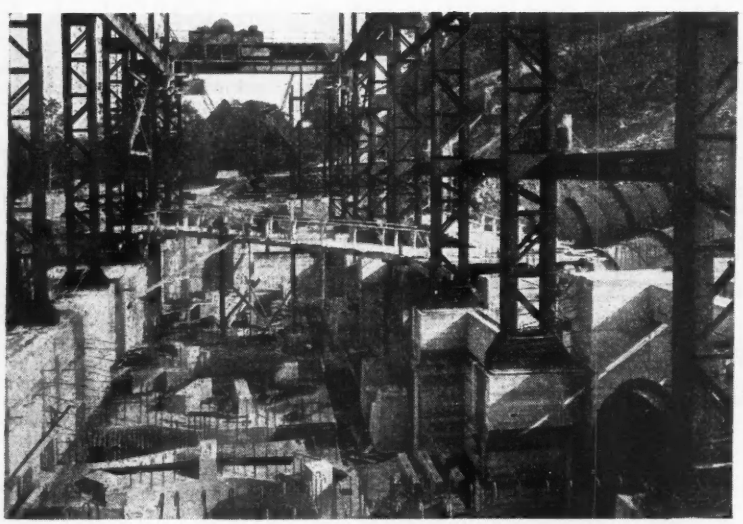


Fig. 2.—Clunie power-house in course of construction.

The New Concert Hall, London.

The passer-by of the Festival of Britain Exhibition site at South Bank, London, sees many unusual structures arising. Of the permanent structures, the new concert hall is the most interesting. It is almost entirely of reinforced concrete, and its uncommon features, which result mainly from the acoustical requirements of the building, include double walls, a balcony supported by a torsional member, columns built one within another, and a double reinforced concrete roof carried on steel trusses. The auditorium will be about 125 ft. wide and 190 ft. long, and the overall height of the structure is about 110 ft. above the ground. Work is proceeding on the foundations and lower part of the superstructure. The foundation comprises large piers of plain concrete and reinforced concrete footings on water - bearing ballast which was dewatered by well-points. It is said that this is the largest dewatering scheme so far undertaken in this country. The concrete is being deposited in the foundations by 6-in. concrete pumps fed from two 18-12 concrete mixers supplied from a weigh-batching plant. To avoid the transmission of noise from the theatre, which will project partly under the stage of the concert hall, columns supporting

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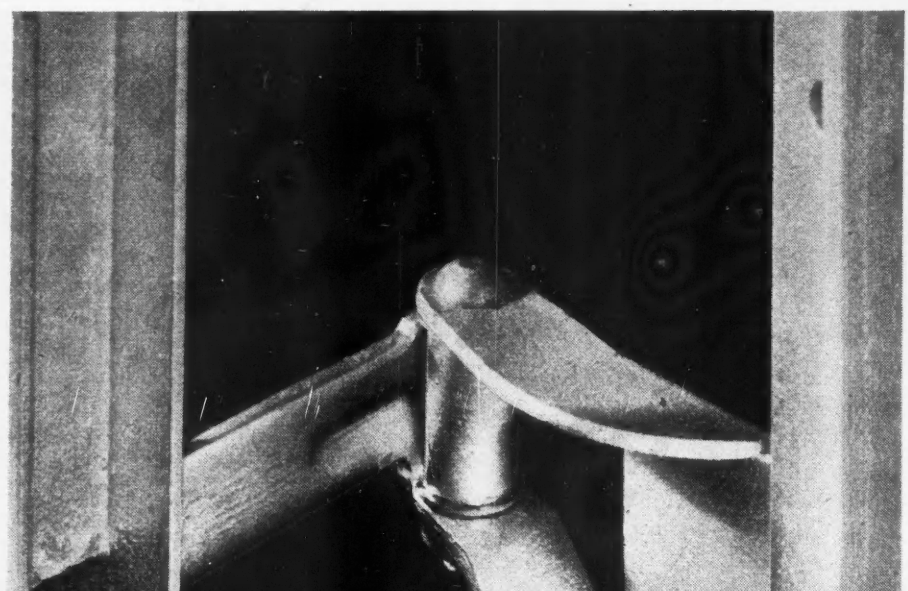

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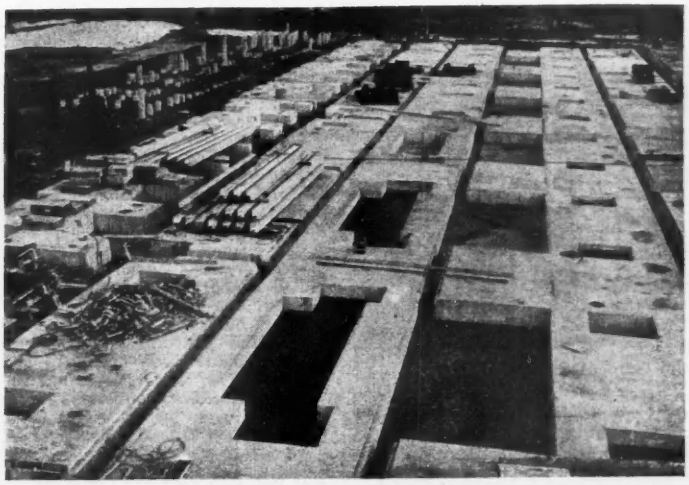

Fig. 3.—Foundation for power-house, Hamworthy, Poole.

the two parts of the structure are double, the columns supporting the theatre being built around those carrying the concert hall. The main walls of the auditorium are hollow, comprising a 10-in. outer leaf of reinforced concrete faced with Portland stone, a 12-in. cavity, and a 10-in. inner leaf of reinforced concrete. The balcony comprises a main reinforced concrete girder which is subjected to twisting action resisted by a torsional tube, roughly triangular in cross section, of which the girder will form the vertical leg. The roof will also be of double construction and will comprise an outer 4-in. slab of reinforced concrete, a 12-in. cavity, and an inner 6-in. slab. The slabs will curve in both directions, and the outer slab will be supported on the inner slab by stools of lightweight concrete. The inner slab will be supported on steel lattice trusses which in the first instance carry only the weight of the shuttering and wet concrete of the 6-in. slab. When the concrete has hardened the steel and concrete will act together as an arch.

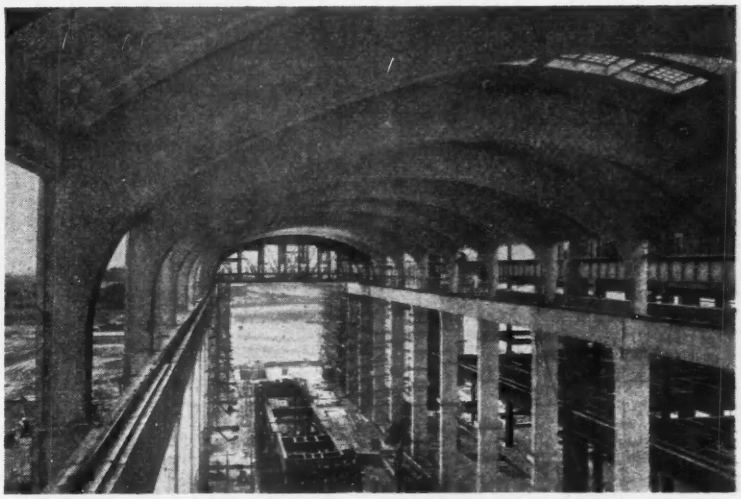

Fig. 4.—Turbine house, Skelton Grange power station.

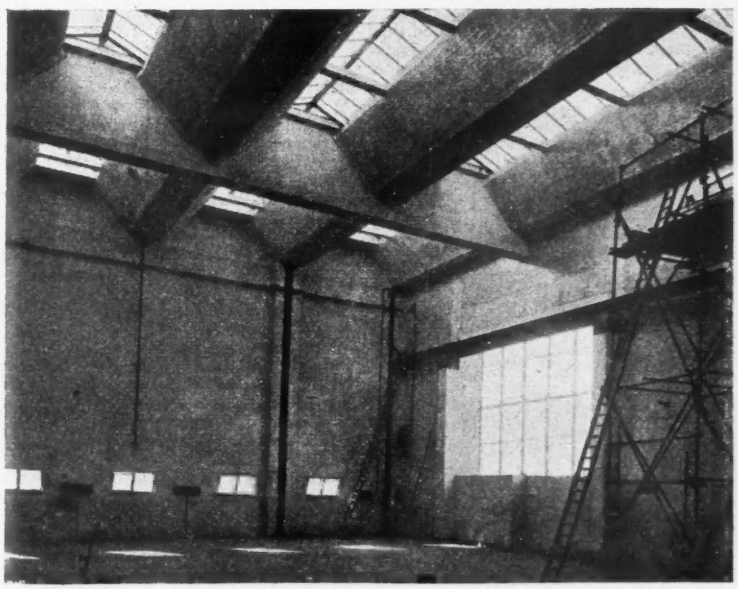

Fig. 5.—Prismatic roof at Filton.

Prismatic Construction.

Recently two or three structures with roofs comprising sloping reinforced concrete slabs, known as prismatic pitched slab or "hipped plate" construction, have been constructed in this country. The feature of this type of roof, the stresses on which can be determined to the degree of accuracy common in other reinforced concrete construction, is that slabs 4 in. or so in thickness can be provided to span considerable distances without beams. One example (Fig. 5) is at Filton, near Bristol, where continuous roof-lights are provided in each bay of the workshops of the B.O.A.C. at the works of the Bristol Aeroplane Co. The building is 150 ft. by 112 ft., the column grid being 30 ft. by 37 ft. 6 in., the prismatic roof spanning this latter distance between main beams. Similar roofs are provided for the adjacent engine-room and propeller shops. One side of this building is adjacent to the Brabazon Assembly Hall, the floor, apron, galleries and foundations of which should not be excluded from a catalogue of recent construction in concrete. The now famous runway is a concrete pavement one and three-quarters of a mile long, 300 ft. wide and 18 in. thick.

Precast Construction.

Three other buildings in this group at Filton are good examples of precast reinforced concrete beams and columns being formed into a monolithic structure when erected. They are two-storey buildings, the largest being 150 ft. long. The columns are firmly embedded in the foundations, and the beams span 23 ft. 9 in. and 21 ft. 6 in. and are 21 in. deep. The 5-in. floor slab and roof slab are cast *in situ*. The boiler house on the same site has a concrete "shell" roof.

Shell Roofs.

The development of "shell" roofs continues, and what was a novelty in this country a few years ago is now almost commonplace. Among the many interesting structures are the roofs for the island-platform stations (Fig. 6) on the westward extension of the Central Line of the London Transport to West Ruislip. The most unique structure, however, is the roof of a rubber factory at Brynmawr, South Wales, which comprises nine flat domes with a rise of 8 ft. (Fig. 7), rectangular in plan and each 90 ft. by 70 ft.

Fig. 6.—Platform roof, Ruislip Gardens Station.

Such domes are a mathematician's concept brought to reality by practical designers and constructors. The domes are supported on open reinforced concrete girders, the top beams of which are curved to the shape of the edge of the dome and the bottom booms of which are horizontal. The two booms are connected by 4 in. by 2 in. reinforced concrete hangers. Rapid-hardening Portland cement was used for the concrete in the domes, which were completed in the summer of 1949, and the shuttering for each of which was removed ten days after casting.

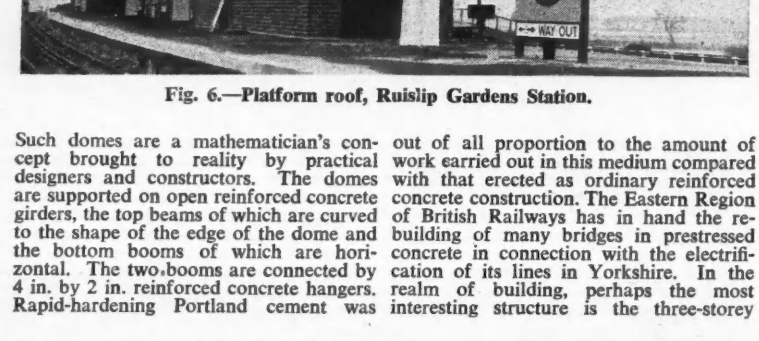

Fig. 7.—New factory at Brynmawr.

Prestressed Concrete.

Publicity, by means of articles, papers read before institutions, excursions, exhibitions, and new associations, continues to be given to prestressed concrete, possibly out of all proportion to the amount of work carried out in this medium compared with that erected as ordinary reinforced concrete construction. The Eastern Region of British Railways has in hand the rebuilding of many bridges in prestressed concrete in connection with the electrification of its lines in Yorkshire. In the realm of building, perhaps the most interesting structure is the three-storey building being erected by the Ministry of Works as a stationery store at Sighthill, Edinburgh (Fig. 8). The building is 220 ft. long and 120 ft. wide. The prestressed beams were precast on the site, except the smaller roof beams, which were made in a factory. There are 200 main beams, each 2 ft. 10½ in. deep by 18 in. wide, and they are prestressed on the Magnel system before erection. The secondary beams, which are 1 ft. 5 in. deep and 11 in. wide, are partly prestressed before being erected and finally prestressed, when erected, by cables extending across the 120-ft. width of the building.

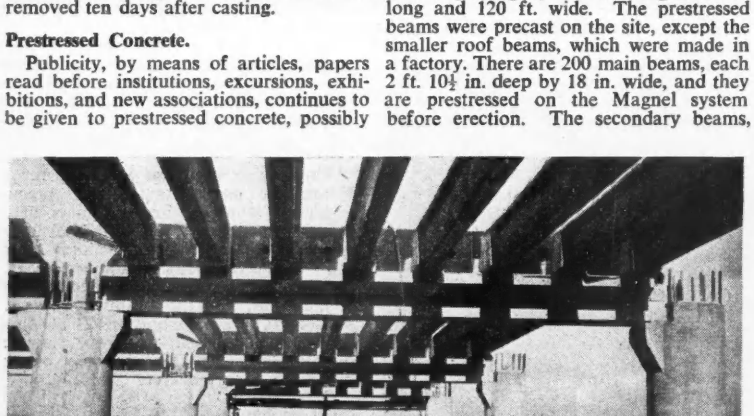

Fig. 8.—H.M. Stationery Office, Sighthill, Edinburgh.

* * *

The Brabazon Assembly Hall, Filton, designed by Eric Ross, F.R.I.B.A. (David du R. Aberdeen, F.R.I.B.A., and P. M. Taylor, A.R.I.B.A., planning and design consultants) was illustrated in *The Builder*, November 11, 1949, and full details of the system of construction employed for the stationery store at Sighthill (designed by the Architects' Department of the Ministry of Works) were given in our issue for October 14, 1949. The island platform shelter at Ruislip Gardens Station was illustrated and described in *The Builder*, September 2, 1949.

The architects, contractors, and others connected with the structures illustrated in this article are as follows:—

Clunie Dam and Power House (Figs. 1 and 2).—Consulting engineers to the North of Scotland Hydro-Electric Board: Sir Alexander Gibb and Partners. Contractors for Clunie Dam: Messrs. George Wimpey and Co., Ltd. Contractors for Clunie Power Station: Messrs. A. M. Carmichael.

Power House, Poole (Fig. 3).—Consulting engineers to the British Electricity Authority, Southern Division: Messrs. Mott, Hay, and Anderson. Contractors: Sir Robert McAlpine and Co., Ltd.

Power House, Skelton Grange (Fig. 4).—Consulting engineers to the British Electricity Authority: Sir Alexander Gibb and Partners. Roof designed on the "Chisarc" system. Contractors: Messrs. Holst and Co., Ltd.

Workshop at Filton (Fig. 5).—Architect to the Bristol Aeroplane Co., Mr. Eric Ross, F.R.I.B.A. Reinforced concrete designs: British Reinforced Concrete Engineering Co., Ltd. Contractors: Sir Alfred McAlpine and Son, Ltd.

Ruislip Gardens Station (Fig. 6).—Architect to Western Region of Railway Executive: Dr. F. F. Curtis, A.R.I.B.A. Roof designed by Barrel Vault Roof (Designs), Ltd. Contractors: Messrs. Allen Fairhead and Sons, Ltd.

Factory at Brynmawr (Fig. 7).—Architects: Architects' Co-operative Partnership. Consulting engineers: Messrs. Ove Arup and Partners. Contractors for the roofs: Messrs. Gee, Walker and Slater, Ltd.

Stationery Store, Edinburgh (Fig. 8).—Designed by the Ministry of Works. Contractors: Messrs. Richard Costain, Ltd.

OBITUARY

Algernon S. R. Ley, F.R.I.B.A.

We announce with regret the death on January 7 of Mr. Algernon Sydney Richard Ley, F.R.I.B.A., M.I.Struct.E., the senior partner in the firm of Ley, Colbeck and Partners. He was 78.

Mr. Ley received his architectural education at the University College, London, and the British School of Architecture, Athens. He was articled to Wigg, Oliver and Hudson, of Bedford-row, W.C., and commenced practice in London in 1897. He won competitions for schools at Romford, Maldon, Walton-on-Naze, and Clacton, and designed many other schools in and around London. Many London branch establishments of Barclays Bank were built to Mr. Ley's designs and he was responsible also for a number of factories in various parts of the country, including several for the Vickers Armstrong Company.

Besides being responsible for Palmerston House, Bishopsgate, the building occupied by his own firm, Mr. Ley designed offices and showrooms in Shaftesbury-avenue, Wigmore-street and Oxford-street and the Pitman's printing works at Bath. The Church of the Holy Redeemer, Sidcup, which is of reinforced concrete, was designed by Mr. Ley, as were a number of local authority housing estates at Chislehurst and Sidcup.

More recently Mr. Ley prepared plans for a community centre and club premises at the Royal Estate, Windsor, both of which are in course of construction.

"THE WORM TURNS"

Twenty Years at the A.A. Press Table

A LIVELY and witty talk providing, nevertheless, a shrewd insight to the attitude of the layman towards architecture, was given by MR. I. C. PERROTT, M.C., at a meeting of the Architectural Association on January 4. The President, Mr. Henry Braddock, A.R.I.B.A., was in the chair.

Mr. Perrott, whose talk was entitled "The Worm Turns: 20 Years at the A.A. Press Table," began by saying that it was natural for people to talk, but it had always struck him as a little odd that anyone should want a record of what they said—in some cases at any rate. Of the 189 million words which he had recorded since 1919, over 5½ million had been about architecture.

"The more optimistic among you sometimes suggest that all would be well if you could have a chance of educating the ignorant layman," continued the speaker. "Well, you have been educating me for twenty years, and I do not doubt that you will be appalled by the result. To some extent, however, this may be due to the fact that in 20 years there must be very few ideas which I have heard expressed by eminent architects which have not been flatly contradicted by other architects of equal eminence, so that I am back where I started.

"Another thing that I have noticed over these 20 years is the apparent lack of continuity in architectural thinking. Twenty years ago a building would be thrown on the screen here and greeted with rapturous applause. Ten years ago it would be received with an awkward silence, while the audience made up their minds whether they were intended to applaud or to laugh. To-day they are quite certain they are meant to laugh.

"The third thing that I have noticed is an omission. I have heard a great deal about architecture as an art, and occasionally something about architecture as a science; but almost nothing about the people whose houses you build and whose towns you plan, except for vague hopes that some way may be found of educating them to like what is good for them.

"I want to try to do a very little to fill in this gap and to tell you something about the attitude of the ordinary ignorant layman towards architecture. No man can adopt the attitude of a layman towards his own profession, as you would realise if, like myself, you spent a good deal of time at meetings of dentists.

"In the eighteenth century your clients were, like yourselves, for the most part men of taste, and together you produced some of the most pleasant buildings in this country. During a great part of the nineteenth century neither you nor your clients had much taste, and you got on very well together. To-day, however, your clients, or their elected representatives, must increasingly be people who, like myself, do not know what they are talking about, and this makes it all the more important to realise what they are thinking and feeling, because they are in a position to exercise almost as much influence on the buildings of our time as you are."

The speaker recalled that it was the general manager of a great railway company who, finding himself at the R.I.B.A. and no doubt wishing to placate his hosts, remarked that he had often thought it would be a good idea to bring in an architect to decorate the work of his engineers. "The idea is still widely held," he went on, "that the architect is—how shall I express it?—the man who puts the icing on the engineer's cake.

"Coming to housing, if you drive through Morden, going south, you pass suddenly from the sort of houses that you build to the sort of houses that we like, from the red brick of the L.C.C. housing estate to the mock Tudor of the builder for whom 'speculative' is a misnomer, since he knew only too well the taste of his clients. In doing so, you may well wonder what were the mental processes—if that is not too flattering a term—or the emotions which led to the inhabitants not only tolerating but even preferring monstrosities of this sort.

Bewildered Architects.

"It seems obvious, from the remarks so often made at A.A. meetings, that the primary feeling of the architect in contemplating the result of giving the ordinary man what he wants is one of bewilderment. Mr. Kenyon, who has done more than many architects to bridge the gap between the two sides, is fond of asking why people are afraid of architects. The question is a valid one. I suggest the real answer is that we are afraid that what we regard as *primarily* something to live in and work in, the architect regards *primarily* as something to look at; and this applies whether we think of town planning or of an individual building. There has been no town plan for London, however modest, which has not envisaged shifting Charing Cross station to the other side of the river; and, as one the greater part of whose time in getting to the office is spent in queueing for the 68 bus at Waterloo, this prejudices me from the start.

"The layman's first judgment of architecture is based on commodity, and it is this which differentiates his outlook on architecture from that which he adopts towards the other arts, such as sculpture. If, however, you transform a piece of sculpture into an object of utility, as by sticking a cigarette lighter in its head and giving it to me for Christmas, my first reaction is to see whether the lighter works, and it is only after that that I pass an æsthetic judgment and say 'Isn't it hideous?'

"It is true, of course, that most architects do pay a great deal of attention to commodity, but too often, in town planning at any rate, they seem to adopt towards it the attitude of that enemy of the human race, the man with a tidy mind. The shops are all tidily grouped in a shopping centre, so that the mother with small children in Welwyn Garden City has to drag them with her for anything up to a mile if she wants to make the smallest purchase. The solitary pub—and again I have Welwyn Garden City in mind—is magnificently planned, to provide all the amenities one could look for, thus causing all right-minded citizens to walk a mile and a half across the fields to drink their beer standing up in a crowded bar parlour.

"Again, we feel that the architect tends to favour the sort of city planning we find in Bath, where the buildings impose themselves on the citizens, instead of the glorious higgledy-piggledy of Fleet-street. The trouble is that we laymen feel that there is something more important than art, and that is the infinite variety of human nature."

Mr. Perrott expressed the view that there was something, happily, to be said for bad architecture, because it did seem to impetrate in a marvellous way the qualities of the time in which it was built. "But," he said, "it seems doubtful whether even the good architect can do much more than reflect the spirit of his age, and therefore, if you are to produce good architecture, something must first be done about us.

The Functional Approach.

"Why do we like the things we do? Why do we like the sham Tudor suburban house? I suggest that the primary reason is that, to use a word which died here of overwork about ten years ago, it is functional—functional, that is, in the spiritual sense. We are most of us timid strangers in the modern world; consciously or unconsciously, it daunts us, and we are glad to hide ourselves from it, at any rate in our own homes, behind sham oak beams and beside inglenooks. This is no new development; our grandfathers built the entrances to their railway tunnels to look like mediæval castles. The Saxon pirates, who were in some part our ancestors, might venture into a great Roman town like Anderida by day, but at night they were afraid of it, and retired to wattle huts outside its walls, thus founding the first garden suburb.

"Secondly, we are afraid of you because your projects seem much too big, and therefore at once frightening and divorced from reality. During the war the A.A. was associated with a plan for Greater London, and I remember walking round the exhibition with two people who studied it in the greatest detail, becoming more and more depressed in the process. Finally they asked me when I thought it was likely to be realised, and when I told them 'not in our lifetime' they brightened up visibly.

"Thirdly, we are afraid of you—though we are a bit out of date here—because we think that you are still obsessed with the idea of combining the maximum discomforts of town and country in an amalgamation of both which ends up as neither. It would help here if when you make drawings of such places you would show them as they appear in winter, and with the rain coming down.

"Finally, we sometimes wonder whether any man—even the architect—knows enough to be trusted to plan.

"You will see that we need educating. What are you going to do about it? As an archbishop said the other day, you can set up the machinery, but will it bear any fruit? Mr. Enthoven, lecturing to children at the R.I.B.A. on Monday, told them that the Greeks worked out systems of proportion for their columns and bases and entablatures. That is all right for children, who will understand it, but if you are going to give talks to adults you will have to make them much simpler. The same is true of books. There is a large reading public for the first three chapters of popular books on architecture, but they preach largely to the converted. The unconverted are very willing to listen, not to plans for putting all London's railways underground by about the year 2000, but to the innumerable smaller ways in which you can make life more pleasant."

A vote of thanks was proposed by Mr. Hugh Casson, M.A., F.R.I.B.A., and Mr. N. Musgrave seconded. Others, including Mr. Eric Bird, M.C., A.R.I.B.A., paid tributes to Mr. Perrott's work

LONDON'S WATERWAYS

The Creeks, Rivers and Canals of the Metropolis

SOME historical facts of London's lesser-known waterways were given by the EARL OF LUCAN, M.C., when he addressed a meeting of the London Society recently. Sir Alan Herbert, M.P., presided. We give the following extracts from the Earl of Lucan's remarks:—

The waterways of London, like all other waterways, may have any one of three functions—namely, land drainage, water supply and navigation—and most of London's waterways have had two or all three functions at various times in their history.

The rivers depend entirely on the physical shape of the land on which London stands, and even the artificial waterways depend on that to a certain extent.

The first river with which I will deal is the Ravensbourne. Deptford Creek, into which the Ravensbourne flows, is used by sea-going ships and is a busy industrial area. Very full use is made of it for amenity purposes by the Lewisham Council, and for two miles of its upper course, above the cross roads at Lewisham, it runs through public parks and recreation grounds.

In 1801 an Act of Parliament was passed for the construction of the Grand Surrey Canal from Rotherhithe to Mitcham, the ultimate object being to construct a canal all the way from London to Portsmouth. There were two schemes, one being for the canal to go from Mitcham through Guildford and Winchester to Portsmouth, and the other being for it to go through the North Downs and join up with another project which was to link Portsmouth with the River Medway at Tonbridge. Neither of those larger schemes was carried out, and only the three and a half miles of canal, which still exist, were constructed. They are in very full use for commercial purposes and there are wharves and factories along the whole length of the canal.

The Croydon Canal was built almost simultaneously with the Grand Surrey Canal. It was a dual-purpose canal, being partly for navigation purposes and partly for water supply. As in the case of most of the early canals, the difficulties were underestimated; in particular, the difficulties caused by the rise from the level of the Surrey marshes to the slopes of the Sydenham hills. The Canal Company ran short of money, but in 1809 the canal was finished. The railways by that time were following very close behind, and by 1836 the canal had ceased to pay and it was bought by the London and Croydon Railway for about one-tenth of its cost of construction, the bed of the canal being used for the railway line. That was the first of the long line of purchases of canals by railway companies. The only part of the canal which is now visible is about 200 yards in a public park in Anerley.

A Noted Trout Stream.

The River Wandle is one of the better-known London rivers. It was made navigable in 1665, at a time when many rivers all over England were being made navigable, and it was a noted trout stream for a considerable time. The only part which is navigable now is the mouth, Wandsworth Creek. At Merton there are the remains of Merton Abbey mill, one of the old mills of which there used to be a very great number along the banks of this river. Merton Abbey mill is preserved as a monument, and above it the Wandle is a very pleasant stream, whilst higher up still, at Morden, it has been excellently dealt with, partly by the National Trust and partly by the local authority. Morden Hall is a little late eighteenth-century manor house which has been swallowed up in the growth of London, but has been preserved in every detail and is used for the local authority's offices. The garden is well kept up, and outside the garden the whole of the park is thrown open to the public. It is a charming place, very much used by the people living in the neighbourhood and containing a stretch of the River Wandle. This is an example to other local authorities of the way in which they should deal with their ancient manor houses and their rivers.

Origin of the Welsh Harp.

The River Brent which, after the Lee, is the largest of the rivers which flow into the Thames in London, rises near Barnet. It is joined by a small stream from the north side of Hampstead Heath and on the other side it is joined by a stream from Mill Hill. At the place where they join the River Brent a dam was made in order to form a reservoir, known as the Welsh Harp, to supply water to the Regent's Canal. For the last three miles of its course the River Brent forms part of the Grand Union Canal.

The Grand Junction Canal (as the Grand Union Canal was first called) was completed in 1801, the Act authorising its construction having been passed in 1793. It was designed to link the Thames at Brentford with the canal system in the Midlands. At the same time as the Grand Union Canal was constructed a branch of it, known then as the Paddington Canal, was made, partly to supply water to West London and partly for the purpose of trade. Pleasure boats used to run from Paddington to Uxbridge, worked with two horses from the towing path, and the journey took about five hours. The type of packet boat used for the purpose was very common on the canals for half a century, until the railways took all the traffic.

The Westbourne is one of the better-known "lost" rivers of London, rising on the west of Hampstead and flowing through Hyde Park where it was dammed up in 1730 to form the Serpentine. From there it ran under Knightsbridge and flowed down east of Sloane-street to Sloane-square. In the Underground station at Sloane-square it was carried across the railway line in a large iron pipe, and it finally flowed out into the Thames opposite Chelsea Hospital.

The Tyburn rose in Hampstead and flowed down Primrose-hill into Regent's Park, and it was carried over the Regent's Canal by an aqueduct. Its bed still exists as a sewer, known as Kings Scholars Pond sewer. It used to flow from Regent's Park down Marylebone-lane into Oxford-street, where in the thirteenth century the City Corporation was given the right to tap the water in order to supply the City. The course of the stream can be traced by the irregularity of the streets. Wherever there is an irregular street in a rectangular town plan the probability is that it marks the course of a river, and that is so in the case of the Tyburn. It flowed down the narrow streets west of Bond-street and, crossing Piccadilly, flowed into Green Park. Near Buckingham Palace it divided; one branch flowed out at Vauxhall Bridge, and the other branch flowed eastward and divided just before reaching Westminster Abbey, one mouth being south of the Houses of Parliament and the other north of Scotland Yard.

The Fleet River is another of the old rivers. It rose on the heights of Hampstead and Highgate, having twin sources, and the only parts of it which are now visible are Highgate Pond and Hampstead Pond. The two streams united near Kentish Town and the river then flowed past King's Cross and down Farringdon-street and flowed out at Blackfriars. Originally the river was navigable below Holborn and was used by large numbers of ships, but from its earliest times the people who lived near threw their rubbish into it, and at regular intervals from the fourteenth century onwards the Fleet had to be cleaned out. Finally the task became too big and too expensive and was given up, and the lower part of the Fleet, from Holborn Bridge (where the viaduct is now) to the Thames, was filled in and formed the Fleet Market.

The Walbrook.

In regard to the next river, the Walbrook, there seems to be clear evidence that it was navigable for at least a few hundred yards from the Thames. From its very earliest times it flowed from Moorfields, along the northern wall of the City and down to the Thames, and it formed the main north-south boundary of the City. To this day the boundaries of the different wards of the City have followed the Walbrook. It is a long time since the Walbrook flowed as a river, because even in Queen Elizabeth's day it had been roofed in and bricked in for a long time.

The River Lee has its natural mouth at Bow Creek and it has an artificial mouth in the Limehouse Cut, an artificial channel made in 1772 to avoid the tortuous bends at the mouth of the river and to bring vessels from the river closer to London, instead of their being on the other side of the Isle of Dogs. The River Lee is navigable as far as Hertford, and the River Stort, which is a tributary of the River Lee, is navigable as far as Bishop's Stortford. The Lee is one of the most important rivers of the Lower Thames and it played a considerable part in the Danish Wars of the ninth and tenth centuries. The River Stort was not made navigable until the middle of the eighteenth century. There has not been much money spent on it, but the Lee is in very good order and a considerable amount of money was spent in 1922 on improving its locks. It is a very good example of a river that is thoroughly efficient, and it is much used not only for commerce but also for pleasure.

The New River was constructed three and a half centuries ago to take water from the River Lee at Amwell, near Ware, and bring it by a tortuous channel to London. Water supply in those days was precarious. Waterworks were constructed on London Bridge by a Dutchman named Peter Morrys in Elizabethan times. He was given a 500-year lease to take water from the Thames. His company was bought out by the New River Company in 1822 and the New River Company was bought out by the Metropolitan Water Board in this century. I believe that the Metropolitan Water Board still pays money on this 500-year lease, which does not expire for another 130 years.

The Regent's Canal Act was passed in 1812, but, owing to financial difficulties, the canal was not finished until 1820. Among other expenses, the company had to pay £450 a year as compensation to the City Corporation for the loss of tolls on the Thames, because the City Corporation owned the river. I do not know why the Regent's Canal became necessary when it did, but I suspect it was due to the number of bridges on the Thames increasing.

Nash's Scheme for Regent's Park.

John Nash was not only given the task of laying out Regent's Park as a building estate for the Crown, but was also employed as surveyor to the Regent's Canal Company, and he combined his two functions admirably. He desired the canal and the park to be very closely linked, and so designed a town-planning scheme on a large and very enlightened scale. His plan was that the park should be laid out with grand houses in the middle and with less grand houses in the terraces at the sides, and outside on the east there was to be the commercial quarter, served by a branch of the canal. The Cumberland arm, as it was called, came down the east side of Albany-street and ended in a basin, and that arm was not filled in until 1940; it still had water in it and a few rotting barges in 1939, but it had then been decided to fill it in and the opportunity was taken to use the bomb debris for the purpose.

The Earl of Lucan concluded: It is worth while to consider the future of the canals and waterways of London. The authors of the County of London Plan insisted that use ought to be made of the canals and advocated that the industry sited along the banks of the canals should be concentrated, so that more of the waterside would be available for amenities. They realised what a tremendously valuable addition a piece of water is to a housing estate, a street or a park.

CORRESPONDENCE

Registration: A Case Against

TO THE EDITOR OF *The Builder*.

SIR,—Having read the further correspondence in your columns, I should like to add to my letter of December 9 that, in my opinion, the root of Registration and Protection of Professions is "greed." I may say that, over the years, I have given at least a certain amount of thought to this matter, and have come to the conclusion that although it may be, and certainly should be, beneficial both to the profession and the public for members of any profession to form a society for the exchange and improvement of knowledge, etc., relating to the profession for which a society is or may be formed, the effect is quite the contrary when there is any tendency to debase a profession into a "ring."

I have been a member of the R.I.C.S. for many years, having been elected in 1913, and my father was an Associate member of the Institution of Civil Engineers for many years, which facts may, perhaps, tend to show that my said conclusions have not been arrived at without consideration. At one time, admittedly, I was of the opinion that articles should be compulsory — possibly because I myself served articles—but with the passing of the years, I have come to the conclusion that articles should not be compulsory for entrance into any profession. You will note that I have stated *any* profession which, of course, includes the protected professions without any exception.

The usual theoretical arguments are always advanced for proposed Registration, but there is one against them which I contend is irrefutable, i.e., that it is fundamentally wrong to hand over to any section of the community the right to be able to dictate how any profession which forms the interest of any such section shall be conducted and to dictate its conduct towards the rest of the community and the community's conduct to the profession. In my opinion it would be greatly to the benefit of the community if the grip of protected professions were loosened, which grip, particularly in this age of education, appears to me especially objectionable. The medical profession, in my opinion, is the only one where protection may be essential, or even admissible from the point of view of the public interest.

When one considers the protection enjoyed in some professions, I should be interested to learn what can be advanced against Trade Unions and their activities, although please do not assume that I am an advocate for Trade Unionism, etc., in which I have not any material interest. Nevertheless, Trade Unionism, in my opinion, is mild when compared with some professional protection which now exists.

P. M. VINTER.

132, Kingston Road, Teddington.

Incentives: A National or Regional System

TO THE EDITOR OF *The Builder*.

SIR,—The letters published in your columns on this subject have given many varied and interesting points of view. It is to be hoped that an operative or two with experience of an incentive system in operation may yet give your readers the benefit of his or their observations.

It has been suggested that a bonusing system complete with labour constants to cover all types of construction work should be formulated to operate throughout Great Britain. The foundation of all bonus systems for constructional work should be based on *collective output*, that is to say, the output of gangs of skilled or unskilled operatives. The composition of and number in the gang vary according to the class of work to be executed and the materials specified to be used. It would be a colossal task to compile an inclusive document classifying all types of buildings, giving the size and composition of the gangs for each classification, the output per hour of the gangs both with and without mechanical aid, showing the breakdown of the man-hours to suit units of measurements (labour constants), taking into consideration and giving alternatives for accessibility of site, mechanisation and manœuvrability on site, the distance of the building line from hard road and the number of storeys or height of building. Such a document would take a number of years to produce and, if issued, could be as a guide only.

A more practical suggestion would be for the separate associations of the building trades employers within a county to get together and formulate a system, first for two-storey houses, the counties to submit the systems to their Regional Federations. Then, if a national system for houses is desirable, the regions would be in a position to supply the answer, but again the labour constants contained in the national system would be a guide only, whereas those laid down by a county would be definite within the county. "CAIN."

Worthing.

Incentives and the Future

TO THE EDITOR OF *The Builder*.

SIR,—The leading article "Incentives and the Future" published in your issue of December 30 rightly isolates the most important question which is likely to be before the industry during 1950. I hope, therefore, that I do not appear captious in querying its reference to nominated sub-contractors.

It is alleged that some bonus schemes have been marred owing to disorganisation brought about by the dilatoriness of some nominated sub-contractors. From my knowledge of your fair-mindedness, I assume that you base your statement on a personal investigation of cases in which bonus schemes have been prejudiced in this way. I join with you, therefore, in deprecating such dilatoriness and I hope that the professions, as well as this Federation, will take appropriate steps to bring home to sub-contracting firms guilty of it the consequences of their fault.

Can it, however, be that in preparing this article during the Christmas season you have been led unconsciously to advocate the policy adopted by Herod in massacring the innocents? Herod's action has never been endorsed by the impartial, though, no doubt, his advisers, who were preoccupied with the security of his dynasty, supported it as, in words more recently employed elsewhere, an act of "rough justice." To-day there may be those who, taking a bluff "business" viewpoint, will say that if some nominated sub-contractors have caused inconvenience by dilatoriness the cure lies in doing away with the lot, innocent and guilty alike, or, at least, in an indiscriminate reduction of their numbers. The logic of this advice will not, I think, bear inspection; and perhaps, as in Herod's time, such advisers may be primarily influenced by other considerations with which I judge that you, Sir, are not particularly concerned.

Surely, if it be proved that dilatoriness on the part of some nominated sub-contractors has caused this inconvenience, the correct policy is to invoke the aid of architects and of sub-contractors' organisations in reasoning with those at fault, or, if they remain obdurate, in penalising them. I have said "if it be proved," not from a reluctance to accept your verdict in the cases you have doubtless investigated, but lest hereafter cases where nominated sub-contractors fail to complete work in time owing to "the spasmodic and unreliable flow of materials" to which your article refers elsewhere, be automatically classed as instances of dilatoriness.

I hope I may end by wishing *The Builder* and its Editor and staff a prosperous New Year.

D. C. MALLAM,
Director, Federation of Associations of Specialists and Sub-contractors.
Dacre House, W.C.2.

*** In reply to Mr. Mallam's wise and good-natured letter, we would only say that the difficulties experienced by sub-contractors are akin to those suffered by the principal contractor, but to a lesser degree. The suggestion made in our leading article was that some sub-contractors take advantage of the fact that they are nominated.—ED.

Price Build-Up To-day

THIRD SERIES (NO. 3)

Coloured Granolithic Paving, Hardcore, Fabric Reinforcement, Tarmac

By "CAIN" (V. C. ABELL)

Coloured Granolithic Paving

ONE of the advantages obtained by analytical price building is fully demonstrated when an item such as this is specified. In the issue of *The Builder* for November 18, an analysis for granolithic paving using ordinary Portland cement was published. By substituting Colorcrete at 281s. per ton for Portland cement at 72s. 6d. per ton, the following rates are obtained :

		Per yd. sup. s. d.
In large areas	¾ in. thick	4 10½
	1 in. ,,	6 2¼
	1½ in. ,,	8 10
	2 in. ,,	11 6¾
In small areas	¾ in. ,,	5 6
	1 in. ,,	6 11½
	1½ in. ,,	9 7½
	2 in. ,,	12 4¾
In narrow widths	¾ in. ,,	7 6
	1 in. ,,	9 4¼
	1½ in. ,,	12 3
	2 in. ,,	15 2

Hardcore

This is assumed to be brick rubble. The labour involved in pegging out the areas to levels, falls or cambers is included in the labour constants given. The cost of rolling per yard super shown in the analysis is a fair average ; the nature of the subsoil under the hardcore must, however, be taken into consideration. For example, a spongy clay subsoil would increase the cost. The hire charges for a roller and driver vary in different parts of the country. In the district in which the writer operates the hire charge for a 3-ton (petrol) roller, complete with driver and fuel, is 9s. per hour, and for a 10-ton (diesel) roller complete, 10s. 6d. per hour. The travelling time of the rollers from depot to site of works and back to depot is charged at the hire rates.

Fabric Reinforcement

The labour constants given cover unloading, laying and normal straight cutting and, as stated, the analysis is intended for vehicle depot floors and the like. Hoisting and tying are *not* included in the constants.

Tarmac

The covering capacity per ton of tarmac varies with the weight of the stone used in its manufacture. The stone under review is assumed to be limestone and the covering capacity per ton is as follows :

	Consolidated thickness	Yds. sup.
2½ in. graded	3 in.	8½
1½ in. ,,	2 in.	11½
¾ in. ,, ..	1½ in.	14¾
½ in. ,, ..	1 in.	19½
¼ in. ,, ..	½ in.	26
¼ in. ,, ..	½ in.	39

Or tonnage per yd. cube :

2½ in. graded	1.10 tons
1½ in. ,,	1.15 ,,
¾ in. ,,	1.25 ,,
¼ in. ,,	1.40 ,,

The rates given are the net cost on site, exclusive of site supervision, establishment charges and profit. Grade "A" wage rates taken. For the method employed of arriving at the cost to the employer of employing labour, see *The Builder* for November 28, 1947.

(To be continued)

TARMAC

Description of item	Materials		Labour			Total cost	
In large areas	Tarmac tons	Cost Tarmac at per ton pence	Labourer wheeling and spreading hours	Cost Labourer at per hour 30.60d. pence	Cost of roller per yd. super pence	Collection pence	Per yard super s. d.
½ in. Consolidated, layer of ¼ in. graded tarmac laid to falls and camber and rolling with a 3-ton roller	.026	at 54s. 16.84	.06	1.83	.75	19.42	1 7½
¾ in. do. do. do.	.039	25.27	.06	1.83	.75	27.85	2 4
1 in. do. do. do.	.052	33.69	.07	2.14	1.00	36.83	3 1
1½ in. do. of ¾ in. graded do. do.	.07	at 49/6 41.58	.07	2.14	1.25	44.97	3 9
2 in. do. of 1½ in. graded do. do.	.085	at 47/6 48.45	.08	2.44	1.25	52.14	4 4½
3 in. do. of 2½ in. graded do. do.	.122	at 46/6 68.07	.09	2.75	1.75	72.57	6 0½

HARDCORE

Description of item	Materials		Labour			Total cost	
	Hardcore yds. cube	Cost Hardcore at per yd. cube 12/6 pence	Labourer wheeling n.e, 50 yds. r. spreading and ramming hours	Cost at per hour 30.60d. pence	Cost of roller per yd. super pence	Collection pence	Per yard super s. d.
IN SMALL AREAS							
4 in. Consolidated, bed of hardcore consolidated by hand, including ramming ground under.	.14	21.00	.40	12.24	—	33.24	2 9¼
6 in. do. do. do.	.21	31.50	.60	18.36	—	49.86	4 2
IN LARGE AREAS							
4 in. Consolidated, bed of hardcore including rolling with a 3-ton roller.	.15	22.50	Labourer wheeling and spreading .10	3.06	2.25	27.81	2 4
6 in. do. do. do.	.22	33.00	.15	4.59	2.75	40.34	3 4½
12 in. do. laid in two layers, each layer rolled with a 10-ton roller.	.44	66.00	.30	9.18	4.00	79.18	6 7½
4 in. do., bed of hardcore laid to falls and camber including rolling with 3-ton roller.	.15	22.50	.13	3.97	2.75	29.22	2 5¼
6 in. do. do. do.	.22	33.00	.18	5.50	3.25	41.75	3 5¾

BUILDING PAPER AND FABRIC REINFORCEMENT

Description of item	Materials		Labour		Total cost	
Paper and fabric laid in bays	Paper or fabric yds. sup.	Cost per yard super pence	Labourer unloading, laying and cutting hours	Cost Labourer at per hour 30.60d. pence	Collection pence	Per yard super s. d.
IN LARGE AREAS. VEHICLE DEPOTS, FLOORS, ETC.						
Non-absorbent tarred waterproof paper, laid on hardcore, well lapped at joints.	1.17	at 1.80d. 2.10	.005	.15	2.25	2¼
Non-absorbent, reinforced waterproof paper as previous.	1.17	at 7.50d. 8.77	.005	.15	8.92	9
No. 610 fabric reinforcement in standard sheets embedded in concrete, well lapped at joints.	1.12	at 12.37d. 13.85	.015	.45	14.30	1 2¼
No. 12 do. do. ...	1.12	at 15.75d. 17.64	.02	.61	18.25	1 6¼
No. 65 do. do. ...	1.10	at 19.87d. 21.85	.025	.76	22.61	1 10½
No. 7 do. do. ...	1.12	at 29.37d. 32.89	.025	.76	33.65	2 9½
No. 2 do. do. ...	1.10	at 62.75d. 69.02	.05	1.53	70.55	5 10½

THE SUPPLY OF ARCHITECTS

Statement of the A.B.T.

THE Association of Building Technicians have expressed their concern at the report to the Minister of Labour and National Service of the Architects' Sub-Committee of the Technical and Scientific Register on "Present and Future Supply and Demand for Persons with Professional Qualifications in Architecture." A memorandum issued by the A.B.T. states:—

There is little in this report which is not open to serious question, whether in its premises, its presentation of "fact" or its policy. The Association of Building Technicians cannot for one moment accept the report's extraordinary conclusion that "until and unless architects in private practice are more fully employed . . . the supply of assistants of a suitable grade for appointment to official posts will remain short of the demand," or the recommendation that "a tendency towards a further increase in the number of entries (to the profession) should be discouraged."

Had the A.B.T., which is the trade union for architects, been consulted in the preparation of the report, it would have been worthy of more attention from the Minister. We wish to comment on the following points:—

1. The premise that the future size of the profession should be based on the pre-war ratio of architects to building personnel, ignores the fact that there was at that time only a small percentage of building controlled by architects. This is a position which we consider should be, and is being, corrected.

2. The report accepts without question the present cuts in the building programme and the possibility of a further shrinkage of the industry. We shall continue to stress that the needs of the people and industry of this country demand a large building industry, where stable employment is possible, and an expanding building programme.

3. The recommendations of the report would continue the present inequality of opportunity to enter the profession, since it sees no need for an increase in government grants and maintenance scholarships. We consider that, whatever the demand, the future supply of architects should be determined by aptitude alone, and not by ability to pay for training.

4. The conclusions of the report make what amounts to an attack on public offices and on their ability to provide good technicians and architecture. The A.B.T., favouring neither the public nor the private office, believe that an expanding programme would provide full opportunity for both types of office to fulfil the needs of the country.

MOBILE ACOUSTICS LABORATORY

How it Operates

THE D.S.I.R. mobile acoustics laboratory was completed in the summer of 1948, and since then has visited building sites in all parts of the United Kingdom. It was constructed from an R.A.F. surplus vehicle. The coachwork was made by a local firm to the Building Research Station's design, and the apparatus and electrical wiring, etc., were installed by the Station. The equipment is suitable for most types of acoustical measurements, although it is mainly used for measuring sound insulation in houses, flats, and other types of buildings.

The noise sources to be studied fall into two groups: airborne sound, such as voices, radio and babies crying, and impact sound, such as footsteps and moving furniture. The measurements are made with synthetic noise sources (to be demonstrated) from which the behaviour of real voices, footsteps, etc., can be calculated. To measure airborne sound, insulated cables are run out from the laboratory to the pair of rooms to be measured. Two loudspeakers in the first room are fed with warble tones by one of these cables, and the loudness of the noise that penetrates into the second room is measured by a microphone in that room, connected by a cable to the laboratory, where the loudness is shown on a meter. To measure the impact-sound insulation, the microphone is left in the second room and the loudspeakers are replaced by a so-called "footsteps" machine, which delivers blows to the floor rather like real footsteps, only more violently. This machine can hit the floor either with brass hammers, to simulate hard shoes, or with rubber hammers, to simulate softer shoes. The loudness of the noise in the room below is again measured by the microphone.

Standard methods for making these measurements have recently been agreed between various European countries actively concerned with these problems.

This mobile laboratory was taken to the Netherlands last year, and was in use for a month in Rotterdam, where detailed measurements were made in a block of experimental flats. The building had been specially designed and built for sound-insulation experiments, and the results obtained were very useful in connection with the design of our own experimental buildings.

In addition to this sound-insulation work in dwellings and other buildings, the laboratory has occasionally been used for other types of acoustical investigation, such as noise reduction in factories and the acoustics of concert halls. The laboratory was used to measure the noise from the trains over the Hungerford Bridge before the L.C.C. concert hall on the South Bank was designed.

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THE NEW "FREE" LIMITS

Licences Needed for Work Unfinished on February 1

THE Control of Building Operations (No. 14) Order which the Ministry of Works made recently reduces as from February 1, 1950, the free limits for industrial and agricultural buildings from £1,000 to £500 per annum, and for educational, office and storage buildings from £1,000 to £100 per annum.

The Ministry of Works wishes to remind all concerned that where work being carried out under the present limits is still unfinished on February 1, and cannot be completed within the new limits, application must be made for a licence to finish the job. No work in excess of the free limits which will then be in force may be carried out until a licence has been obtained. The application should refer only to the work which remains to be done and not to any work which has already been done. In the case of work of this nature which has started before December 12, the date on which the new Order was announced, the Ministry of Works will not normally refuse to grant a licence for its completion. Sympathetic consideration will also be given to applications to complete work started after that date, although it will not be possible to grant a licence in every case, especially where the work is unessential and was obviously started too late to have any hope of being completed in time.

It is essential that applications should be made as early as possible when it becomes apparent that the job will not be completed before February 1. If a large number of applications are submitted at the last moment it will not be possible for Ministry of Works Licensing Officers to deal with them expeditiously, and work will therefore be liable to delay until a licence can be granted.

BOOKS RECEIVED

FIRE IN BUILDINGS. By Eric L. Bird and Stanley J. Docking. (London: A. and C. Black, Ltd.) Price 15s.

MECHANICAL WORLD YEAR BOOK, 1950. (Manchester: Emmott and Co., Ltd.) Price 3s. 6d.

TEACH YOURSELF QUANTITY SURVEYING. By C. A. Perry. (London: English Universities Press, Ltd.) Price 4s. 6d.

TENONING, MORTISING AND BORING. (Surrey: The Technical Press, Ltd.) Price 10s. 6d.

*** Books reviewed in these columns may be obtained on application to the Publisher, "The Builder," 4, Catherine-street, Aldwych, W.C.2 Cash should accompany the order.*

R.A.F. Officers' Re-union.

Their Royal Highnesses the Duke and Duchess of Gloucester have given their patronage to the R.A.F. Officers' Re-union Ball which is being sponsored by the R.A.F. Reserves Club, of which Air Chief Marshal Sir Guy Garrod, G.B.E., K.C.B., M.C., D.F.C., is president. The Ball is to be held at the Dorchester Hotel, London, on February 3. Tickets (35s. each) can be obtained from the R.A.F. Reserves Club, c/o R.N.V.R. Club, 38, Hill-street, London, W.1.

Technical College, Birmingham.

The Minister of Education has cut by £65,187 the cost of building the branch technical college at Garrett's Green, Birmingham. The contractor's tender accepted by the Birmingham Education Committee amounted to £315,187.

M*

F.B.I.'s NEW OFFICE IN TORONTO

A Scheme to Help Businessmen

TO assist businessmen in the United Kingdom to improve the trade of this country with the dollar markets of North America, the Federation of British Industries, which has throughout been associated closely with the Dollar Exports Board, has opened an office of its own in Canada which will supplement D.E.B.'s work and will extend the scope of F.B.I. representation in the Dominion.

Mr. Moir Mackenzie (deputy director-general of the F.B.I.) recently returned from a visit to Canada, where he has completed the arrangements. Offices have been secured in the Royal Bank Building in Toronto and were opened on January 3. The Federation's Canadian team will be led by Mr. Hugh D. Scully as Canadian adviser with Mr. J. H. C. Mahaffy as general manager.

The close co-operation between the Federation in London and the Dollar Exports Board will be paralleled by a close working liaison between the Dollar/Sterling Trade Board, recently formed by Mr. James Duncan and the Federation's Toronto office.

Another important object of the Federation in making these arrangements is to be able to offer common space and facilities to the Canadian representatives of British interests. It is expected that further space will become available during 1950 in the Royal Bank Building and it is hoped that British groups deciding to open offices in Toronto will locate them in this building where their representatives can readily turn to Mr. Scully, Mr. Mahaffy and their staff for guidance.

The three main objects of the F.B.I. are thus: (a) To make available to member firms interested in the Canadian market first-class advice and help, from a staff which is in the closest touch with Canadian Government and trade circles with the Dollar/Sterling Trade Board (counterpart of our Dollar Exports Board), and with Canadian channels of distribution generally. (b) To make available to Canadian industrialists and consumers information about sources of supply of goods from Great Britain. (c) To be able to offer to industrial groups, or to Trade Associations, services and office accommodation for their representatives in Canada, so that all of them should gain through being together, through having available the advice and help of its Canadian adviser and manager, and through being able to occupy one of the best buildings in Toronto, economically serviced from a common pool.

Recognising the over-riding importance of increasing British exports to Canada, the Federation has decided that these facilities should not, as is its normal practice, be restricted to direct members of the Federation.

REDUCTION OF BUILDING COSTS

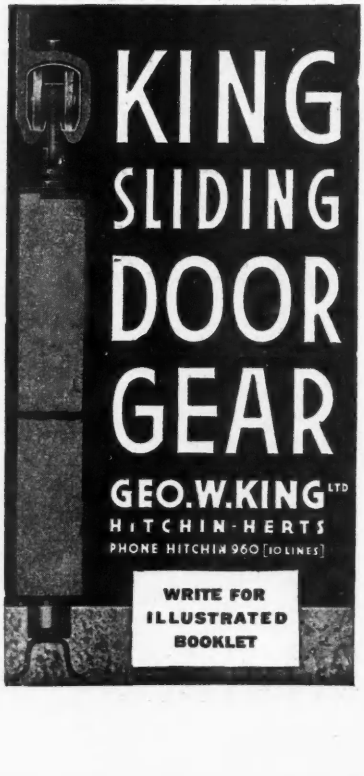
"Builders Must Play Their Part"

SPEAKING at the annual meeting of the London Master Builders' Association (Central Area No. 5) in London, on January 3, MR. NORMAN LONGLEY, President of the National Federation, said that he had heard it suggested that the reductions in the building programme, which the Government had decided upon as part of their post-devaluation policy, justified a relaxation of the building industry's effort. "This sort of talk is pure defeatism and a policy of despair," declared Mr. Longley. "It is not worthy of our industry. The reductions in the building programme, though considerable and though likely to affect the rhythm of production, are to be made gradually—on the advice of the industry's leaders. And the building programme for 1950 still consists of a large volume of work which we must carry out efficiently and at the lowest possible cost, if we in the building industry are to play our part in helping our country to overcome its economic crisis.

"The national interest must come before all sectional interests, and I appeal at the start of this New Year to all earning their living in the building industry to redouble their efforts during 1950."

COMPARATIVE PRICES OF MATERIALS

	January, 1939.	*January*, 1949.	*January*, 1950.
	£ s. d.	£ s. d.	£ s. d.
Flettons	2 6 3	4 5 0	4 5 0
Blue wirecuts	7 4 0	16 7 6	16 14 6
Glazed bricks	24 0 0	49 0 0	51 0 0
Thames ballast	7 3	15 9	15 9
Pit sand	7 9	15 2	15 2
¾ in. shingle	7 3	15 2	15 2
¾ in. broken brick	11 3	17 6	17 6
Portland cement	2 2 0	3 11 6	3 10 6
Portland stone	4 5	6 1½	6 1½
Slates :			
24 in. x 12 in.	31 5 0	67 14 0	69 18 0
20 in. x 10 in.	20 15 0	44 12 6	46 6 3
16 in. x 10 in.	14 7 6	30 12 0	31 13 3
Tiles :			
Machine-made	4 2 6	9 14 6	9 14 6
Hand-made	4 17 6	11 11 0	11 11 0
R.S. Joists	16 10 0	30 10 0	34 0 0
Sheet lead	23 0 0	141 10 0	114 15 0
Linseed oil	2 11	1 1 9	15 6
Ground English white lead	2 10 0	8 3 6	7 9 6
White lead paint	16 8	2 5 0	2 5 0
Red lead	1 18 0	7 18 9	7 13 9



PROGRESS AT HEMEL HEMPSTEAD

THE opening of 1950 finds the Hemel Hempstead Development Corporation commencing the construction of an industrial road which will open up the industrial area of the new town. Approval to start was received recently from the Ministry of Town and Country Planning, and Dowsett Engineering and Construction, Ltd. began work immediately. The new town's industrial area will eventually employ more than 5,000 people.

One factory, of the Hemel Hempstead Engineering Co., Ltd., is already working in the new industrial area, having moved from an unsuitable location in the old town. It is expected that the first factory from London will move in the autumn of 1950, although negotiations are not yet complete.

The Development Corporation has 233 houses under construction at the moment, and 322 dwellings are due to be started soon. In the near future the Corporation will have constructed or have under construction £233,000-worth of road and sewer works, and £897,500-worth of building work.

February will see the Corporation's first houses occupied, and during the year it is expected that 200 houses and flats will be completed and the first new shops starting business in the new town's first neighbourhood.

A Retirement.

A ceremony was held recently in the Public Halls at Blackburn at which farewell tributes were paid and gifts presented to Mr. Herbert Airey, who has retired from the position which he held for 30 years of senior plumbing lecturer at the Blackburn Technical College.

1950 Year Book.

The Southern Counties Federation of Building Trades Employers have recently issued the Federated Builders' Year Book for 1950. This contains a list of local associations and secretaries, etc., a list of members and also a section devoted to the National Joint Council Working Rules.

SOUND INSULATION PROBLEMS

D.S.I.R. Findings

A RECENT Social Survey carried out for the Building Research Station shows that about one family in every four who live in houses are annoyed by noise from neighbours. In some modern blocks of flats about two families out of three are troubled. Poor sound insulation between adjacent houses and flats is known to have been a cause of complaint for nearly a century, but developments in flat construction have apparently increased the noise nuisance, for the proportion of complaints in modern flats is about double that in nineteenth-century buildings.

No serious attempts were made by scientific organisations to study sound insulation until the early 1920's. The beginning of large programmes of public housing, combined with the increasing popularity of the radio and the noisiness of modern construction, then made scientific studies essential. They were begun in several countries, including Great Britain. Both the Building Research Station and the National Physical Laboratory of the Department of Scientific and Industrial Research have been active in sound insulation studies since that time, using combined teams of architects and scientists. By 1939 a successful technique of insulation had been developed in this country, giving higher standards than were obtainable elsewhere.

Post-war Standards.

After the war an intensive effort was made to apply the ideas in practice, and standards for airborne and impact sound insulation between houses and flats were established. The major effort was at first put into houses, because these formed the bulk of the building work. Techniques were popularised for traditional construction and the designers of new kinds of houses were helped to find solutions for their particular problems. Many designs of new semi-detached and terrace houses, though not all, now incorporate sound insulation treatments. These are generally cheap and often add little or nothing to the cost of the traditional party wall. There is nothing compulsory about the standards, but there is now no reason why they should not be obtained by anybody anywhere.

Flats are more difficult to deal with, for the sounds travel upwards, downwards and sideways by several indirect paths. The most troublesome noises are the radio, piano and the sounds of children playing, and those caused by impacts on the structure, such as the banging of doors and people walking about. The Building Research Station has now worked out ways of treating the commoner types of construction, and three blocks of flats incorporating these ideas are now being built for the Station on its experimental site at Abbots Langley. The Station cannot try everything, however, and depends on independent designers and their clients to attempt to incorporate suitable treatments from which experience and knowledge can be obtained. The Station's mobile laboratory makes it possible to obtain accurate insulation data from such trials.

The blocks of flats at Countess-road, Walthamstow, which are being measured at the present time, are particularly interesting for the treatment to deal with impact noise on floors, which is one of the worst noise problems in flats. The treatment is one which was developed before the war and which the Walthamstow Borough Architect, Mr. F. C. Southgate, adapted to suit his needs. The treatment is called a floating floor, and in its essentials consists of about 2 in. of concrete poured *in situ* on to a layer of glass wool on top of the sub-floor. The glass wool has the right kind of springiness to insulate sound, without making the floor unsteady. The floating floors rest on ordinary concrete sub-floors and are given whatever wearing finish is desired.

This kind of treatment is now being widely used, but so far as the Station is aware the Countess-road flats were the first big scheme using floating floors, and probably the biggest scheme which has yet been carried out. The Station's measurements have shown that this treatment is successful, giving as great an improvement in sound insulation as would be given by close carpeting with an underfelt. It is, too, cheaper and more permanent than carpeting.

It can now be claimed that much progress has been made in research on sound insulation. As far as houses are concerned, this country holds a definite lead over the rest of the world. For domestic work the aim is an airborne sound insulation equal to 2 ft. of solid brickwork, and it is being obtained in houses from ordinary builders cheaply. Scandinavian countries are now starting to use constructions which aim at these standards, but in the United States of America, for instance, sound insulation is still regarded as a difficult and expensive refinement. For this reason considerable interest is being shown by American investigators in the British and European work on sound insulation.

We are obviously not so far forward in finding the right solutions for flats, but the Station expects that in the next three or four years, given good co-operation from architects, builders and local authorities, the problem can be satisfactorily solved.

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NEWS IN BRIEF

Building Material Producers.

The address of the National Council of Building Material Producers as from December 20 has been 10, Princes-street, London, S.W.1. (Tel.: Abbey 5111 (unchanged).)

Builder's 99th Birthday.

On New Year's Day, Mr. Alfred Crundwell, a former builder, of Tunbridge Wells, celebrated his 99th birthday. He first went to Tunbridge Wells 80 years ago and shortly after his arrival became manager of a builder's firm and earned 8d. an hour.

College of Estate Management.

The Old Students' Association of the College of Estate Management has now been formed with a temporary committee which will hold office until the first A.G.M. to be held at the College at 7 p.m. on February 3 next. As an inaugural social function it is proposed to hold a dance jointly with the College Students' Union at Caxton Hall on January 28, 1950. The Hon. Secretary is B. G. Cooper, 18, York-road, Ealing, W.5.

Pre-Cut Houses for Australia.

Twenty-four houses, forming a part of a contract obtained by Messrs. W. J. Simms, Sons and Cooke, Ltd., of Nottingham, for 1,750 wooden pre-cut houses for the Government of Victoria, Australia, have left the firm's works by rail for shipment by the s.s. *Kent* from Liverpool. The timber used is being purchased in Europe on behalf of the Victorian State Railways, and is not part of any consignment purchased by this country for her own use.

L.M.B.A. Annual Meeting.

The L.M.B.A. Annual General Meeting takes place in the Park Lane Hotel, on Thursday, when Mr. R. R. Costain, C.B.E., the present Senior Vice-President, is expected, according to precedent and tradition, to become President: this, in place of Mr. Nigel Hannen. Mr. D. F. Cox and Mr. W. H. Gough-Cooper remain Vice-Presidents. They will be joined, if the officers' recommendation is accepted, by Mr. D. E. Woodbine Parish, as Junior Vice-President. Mr. E. W. Garrett is being recommended again for position of Honorary Treasurer.

The L.M.B.A. is holding a luncheon before the meeting at which Mr. Michael Waterhouse, M.C., President of the R.I.B.A., is to speak on the lessons the building industry commission of investigation learned in the U.S.A. last summer.

Standard Method Thesis Competition.

The result of the thesis competition organised by the Standing Joint Committee for the Standard Method of Measurement on the subject of "A Critical Review of the Fourth Edition of the Standard Method of Measurement," has now been announced. The successful competitors were: First (£100)—Clive Browning (Bristol); Second (£60)—Robert White (Co. Durham); and Third (£40)—Leslie Holes (Norwich). Cash prizes were also awarded to: Edward Chalkley (Hendon), Edward Tuckett (Luton), David Warren (Wembley), Michael Felton (Orpington), Anthony Deacon (Edgware), Denis Hyams (London, N.16), and Frank Brown (Worksop). Altogether 37 theses were submitted; the remaining competitors have received presentation copies of the Fourth Edition of the Standard Method of Measurement.

FEDERATION OF MASTER BUILDERS

Building Cuts Resolution

THE following resolution was passed by delegates of the Federation of Master Builders at a recent national half-yearly general meeting:—

"That we, as a Federation, must register the strongest protest against the method of achieving economies in capital investment in the housing programme, amounting to £35,000,000 per annum. We appreciate the need for such economies, but we feel that these should be made jointly with a view to (a) reduction in taxation, and (b) the defeat of the inflationary tendency. The vesting of the housing programme in the local authority, to the practical exclusion of free enterprise, means an additional burden on the national exchequer, since local authority housing is highly subsidised and free enterprise does not receive one penny.

"That we, as a Federation, do further strongly protest against the suggested additional cuts of £35,000,000 in the miscellaneous category of building. This must cause a loss of labour to the industry and seriously prejudice any future housing programme, vitally essential to the early re-establishment of our economic position.

"That we, as a Federation, do further strongly protest against the enormous burden placed on the country by the operation of direct labour and would instance the report issued upon the investigation into such operations in the Borough of Battersea."

TRADE NEWS

Business Transferred.

The Universal Flooring Co., of Putney, inform us that their business has been acquired by A. Vigers Sons and Co., Ltd., 58-9, Poland-street, W.1, who will carry out all existing contracts.

A Company Title.

As from January 2, the two companies formerly known as The Airscrew Co., Ltd., and Jicwood, Ltd., will in future be known as :—The Airscrew Company and Jicwood, Ltd., Weybridge, Surrey. (Tel.: Weybridge 1600.)

An Improved Filler.

With reference to the Improved Templaster Filler (*The Builder*, December 16, 1949), we have been asked to point out that Templaster is manufactured by Messrs. C. G. Templer and Co., Ltd., 109, Bollo Bridge-road, Acton, W.3.

Change of Address.

The Val de Travers Asphalte Paving Co., Ltd., of Val de Travers House, 21-22, Old Bailey, London, E.C.4, have informed us that the address of Thomas Faldo and Co. (1929), Ltd., is now removed from their office to 7, Hobart-place, London, S.W.1.

The New House of Commons.

In our article on the rebuilding of the House of Commons (*The Builder*, January 6), the name of the demolition contractors was incorrectly given. This work was carried out by Charles Griffiths, Ltd., demolition and excavation contractors, 55, Park-avenue, London, E.6.

In connection with the same building, we have been informed by Concrete, Ltd., of Hounslow, Middlesex, that "Bison" floors and roofs were used in the following parts: Inn Court, Plant Room P, Boiler House Passage, G.P.O. Switchboard Room, Cloister Roof, South-West Tower, and South-West Entrance Lobby.

OFFICIAL NOTIFICATIONS

Paint Manufacture.

The Board of Trade announce that from January 16 licences will no longer be necessary in order to acquire and use materials for the manufacture of paint, lacquer, varnish and distemper. Purchases of linseed oil for paint manufacture, however, remain subject to allocation. These allocations will continue to be issued by the Board of Trade. These changes are given effect by a new Board of Trade Order, the Control of Paint (Revocation) Order, 1950 (S.I. 1950, No. 24, price 1d.), revoking the Control of Paint, etc. (No. 3) Order, 1942, and the Control of Paint (Amendment) Order, 1947.

Import of Hardwood.

In accordance with the statement made by the President of the Board of Trade in the House of Commons on December 15, the Board announce that Open Individual Licences will be freely issued for the import of hardwood timber which is consigned from and originates in any country or territory other than: Argentine, Belgium, Belgian Congo, Bolivia, Canada, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, French Somaliland, Germany (Western), Guatemala, Haiti, Honduras, Iran (Persia), Japan, Liberia, Luxembourg, Mexico, Nicaragua, Panama, Philippines, Switzerland, Tangier, Uruguay, United States of America, Venezuela.

Applications for these licences should be submitted in writing direct to the Import Licensing Department, Board of Trade, Romney House, Tufton-street, S.W.1. Applications for Open Individual Licences for hardwood should give the name and address of the applicant and need not be submitted on the normal application form ILD/A. Licences will be issued as from January 16 without limit as to quantity, value or period of validity. The Board of Trade, however, reserve the right to withdraw or revoke these licences if necessary.

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THE SCOTTISH BUILDER

Housing Advisory Committee

AT a meeting in St. Andrew's House recently, Mr. Woodburn thanked the Scottish Housing Advisory Committee for the valuable work they had done. The Committee's reports, he said, had been widely read not only at home but also in Europe and in the United States. One of them, "Planning Our New Homes," had had almost certainly a record sale for any Government publication on a Scottish subject. Mr. Woodburn added that the new Housing Act, which dealt with the improvement of dwellings and completed the legislative framework of Scottish housing, owed much to the Committee's report, "Modernising Our Homes."

The Committee also considered how to carry out their new remit, which is to advise the Secretary of State on the housing needs of special groups such as the aged, the single and people in special occupations. It is hoped that this report, when completed, will be a useful supplement to "Planning Our New Homes," which provided guidance on the housing needs of the general population. The Committee agreed to delegate the new remit to a sub-committee under the chairmanship of Mr. William Maltman, J.P., Town Clerk, Alloa.

Gift of Architectural Drawings

A GIFT of some 200 drawings of famous Scottish buildings, most of which formed the basis of illustrations in MacGibbon and Ross's "The Castellated and Domestic Architecture of Scotland" and "The Ecclesiastical Architecture of Scotland," has been made to the Edinburgh Public Libraries by the Misses Ross, daughters of the artist. Many, however, are later drawings. The five volumes of the "Castellated" appeared from 1887 to 1892, and were followed in 1896 and 1897 by the three-volume "Ecclesiastical," and to this day there is no comparable source of reference and research on Scottish architecture. A selection of the drawings is now on show in the Central Library and sketches in Huntly House Museum.

NEW BUILDINGS

Ayr.—Plans to be prepared for 42 houses at Forehill-rd. site to be erected by the Scottish Special Housing Association, 15, Palmerston-pl., West End, Edinburgh.

Edinburgh.—Plans to be prepared for Catholic school (St. David's) to be erected at estimated cost of £100,000 at West Pilton, for which the architect is A. G. Forgie (F.), Municipal-chbrs., Parliament-sq., High-st., Edinburgh.

Glasgow.—Corporation to erect at Cowden-st. a new housing scheme, for which the architect is Archibald J. Jury, Council Housing Offices, Glasgow Cross, The Trongate, Glasgow, E.C.1.

Glasgow.—Plans to be prepared for alterations and additions at 28-38, West-st., Tradeston, for the Road Haulage Executive, 11, Bothwell-st., for which the architects, etc., are Wilson, Hamilton & Wilson, 21, Hope-st., Glasgow, W.C.2.—Plans to be prepared for Hay's Wharf Cartage Co., Ltd., High Holborn, London, for a new garage to be erected at Anderston site in Bishop-st., for which the architects are Donald & Wishart, 233, West Regent-st., Glasgow, W.C.2.

Glasgow.—Plans in hand for new offices, etc., to be erected for James Ferguson & Sons, Ltd., Orr-st., Bridgeton, at Charlotte L. South, for which principal contractors are Strathendric Structures, 411, Pollockshaws-rd., Queens Park, Glasgow, S.C.3.

Kilmarnock.—Plans to be prepared for a scheme estimated at £270,000 for new factory and new offices, etc., at West Shaw-st. and Low Glencairn-st., for Blackburn, Morton & Sons, Ltd., carpet, etc., manufacturers, Kilmarnock.—Plans to be prepared for a scheme of additions estimated at £12,000 for Glenfield & Kennedy, The Engineer Works, Kilmarnock, by their own architects.

Perthshire and Kinross.—Plans to be prepared for the proposed secondary school at Stanley, for which the architects are the Council Staff, County-bldgs., York-pl., Perth.

FUTURE CONSTRUCTION

PUBLIC APPOINTMENTS

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

JANUARY 16.

†***Enfield U.D.C.**—Public convenience at Southbury-rd. E. & S. Dep. £2 2s.

†***Harrow U.D.C.**—30 dwellings, Honeypotla. estate, Kenton. E. & S. Dep. £2 2s. Tenders by February 6.

JANUARY 18.

†**Devon C.C.**—19 police houses at various sites. County A., 97, Heavitree-rd., Exeter. Dep. £3 3s.

†**Hyde T.C.**—36 houses at Harbour Farm estate. B.S., Municipal-bldgs. Dep. £2 2s.

JANUARY 19.

†***Derby C.B.**—Reinstatement work after fire, Darley Abbey Mansion. Thos. W. East (F.), Boro' A. Dep. £2 2s. Tenders by February 21.

†***Derby C.B.**—Fire station, Nottingham-rd. Thos. W. East (F.), Boro' A. Dep. £2 2s. February 20.

JANUARY 21.

†***Chester City.**—Conversion of 6 Army Nissen huts into dwelling houses at Poulton. City E. & S.

JANUARY 23.

***Barnes T.C.**—War damage repair and internal decoration of 26 flats, Chertsey-court. W. R. Shepherd, B.E. & S. Dep. £1.

†***Coventry T.C.**—Memorial homes for the aged at Spon End, comprising 9 bungalows, 12 flatlets and community building. D. E. E. Gibson, City A., 1a, Warwick-row. Dep. £3 3s. Tenders by February 10.

†***West Sussex Standing Joint Committee.**—Extension of Training School to provide lecture room and additional sleeping accommodation at Police Headquarters, Kingsham-rd., Chichester.

JANUARY 24.

Worksop R.D.C.—Four houses at Carburton. B. D. Thompson, 83, Bridge-st. Dep. £3 3s.

Worksop R.D.C.—Eight houses at Ingham-rd., Bawtry. B. D. Thompson, 83, Bridge-st. Dep. £3 3s.

JANUARY 25.

†***Crawley Development Corporation.**—133 houses and 27 garages at No. 1 housing site, Northgate. Chief A., Crawley Devpt. Corp., Broadfield, Crawley.

†***Hampshire Police Authority.**—Police house at Chilbolton and 1 at Hurstbourne Priors. County A., The Castle, Winchester. Dep. £1 1s. each.

Hungerford R.D.C.—Four pairs of houses at West Shefford. S., Council Offices, 1, Cheyne-st. Dep. £2 2s.

Northampton R.D.C.—72 houses at various sites. R. J. Miller, Council Offices, 1, Cheyne-walk. Dep. £2 2s.

JANUARY 26.

†**Halifax C.B.**—First stage of Exley Secondary Modern School. B.E., Crossley-st. Dep. £2 2s.

†***Halifax C.B.**—Completion of first stage of Exley secondary modern school. B.E., Crossley-st. Dep. £2 2s.

JANUARY 28.

***Ploughley R.D.C.**—12 houses at Ardley. F. E. Openshaw (A.), Oxford Allied Architects, 65, St. Giles-st., Oxford. Dep. £2.

Rugby R.D.C.—26 houses at 3 sites. S., 24, Warwick-st. Dep. £1 1s.

†***West Sussex Standing Joint Committee.**—Police houses at various sites. F. R. Steele (F.), County A., County Hall, Chichester.

***Widnes T.C.**—Six shops with 3 flats over at Hale-rd. estate. T. A. Brittain, A., Boro' A., Brendan House, Widnes-rd. Dep. £2 2s.

JANUARY 30.

***Clacton U.D.C.**—Public convenience at West Cliff. E. & S., Town Hall. Dep. £3 3s.

†***Halifax C.B.**—County primary school, Illingworth. A. and R. Pickles, architects, 3, Ward's End. Dep. £2 2s. Tenders by February 24.

Newark (Notts) R.D.C.—Two houses at Thorney. Wm. Saunders & Partners, 24, Castle Gate. Dep. £3 3s.

JANUARY 31.

***Barton-upon-Humber U.D.C.**—16 bungalows for aged persons at Tofts-rd. estate. C., Council Offices. Dep. £2 2s.

Carmarthen T.C.—52 houses and 16 flats. B.E. & S., Municipal-bldgs. Dep. £2 2s.

†***Hampshire C.C.**—Secondary school at Romsey-rd., Winchester. County A., The Castle, Winchester. Tenders by March 8. Dep. £3 3s.

FEBRUARY 1.

***Welton R.D.C.**—Six houses, Owmby-by-Spital. Wm. Saunders & Partners, architects, 24, Castlegate, Newark-on-Trent. Dep. £3 3s.

FEBRUARY 2.

***Billericay U.D.C.**—Public conveniences at Station-la., Pitsea. S., Council offices. Dep. £2 2s.

FEBRUARY 3.

†***Southgate B.C.**—11 flats, Avenue-rd., N.14. B.E. & S. Dep. £2 2s. Tenders by February 7.

FEBRUARY 4.

***East Grinstead U.D.C.**—Ten lock-up garages, drive and wash-down at Stonequarry estate. C., Council Offices. Dep. £2 2s.

FEBRUARY 6.

Frome R.D.C.—Four houses at Standerwick. J. Rogers, architect, Radstock, nr. Bath. Dep. £1 1s.

***N.E. Metropolitan Hospital Board.**—Three pairs of staff cottages, Severalls Mental Hospital, Colchester. Secretary, 11a, Portland-pl., London, W.1. Dep. £2 2s.

FEBRUARY 8.

South Molton R.D.C.—12 houses at Chulmleigh. A. G. Oxland, 8, East-st., South Molton, N. Devon. Dep. £2 2s.

FEBRUARY 10.

***Durham T.C.**—46 houses, Sunderland-rd. estate. City E. Dep £2 2s.

FEBRUARY 13.

***Hampshire C.C.**—Additional classrooms, Cove Secondary School. E. & S., Farnborough. U.D.C., Town Hall, Farnborough. Dep. £1 1s.

FEBRUARY 14.

***Bournemouth C.B.**—72 flats, Kinson estate. Boro' A. Dep. £2 2s.

FEBRUARY 23.

***Kendal T.C.**—50 houses, Hallgarth estate. J. Barnfather, B.E. & S. Dep. £2 2s.

FEBRUARY 27.

***Liverpool T.C.**—Office, messroom and drying room at Llanforda filter beds, Oswestry. Water E., 55, Dale-st.

NO DATE.

***Kirkcaldy T.C.**—Various trades for new municipal building, Wemyssfield. C. D. Chapman, T.C.

***Wrexham, Powys and Mawddach Hospital Management Committee.**—Alterations, extensions, new buildings, etc., to various hospitals and hospital properties at various places. H. Anthony Clark, F. C. Roberts & Partners, 41, Regent-st., Wrexham.

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JANUARY 19.

†***Derby C.B.**—Repairs, internal decorating and external painting, Ashe Hall School, Etwall. Thos. W. East (F.), Boro' A. Dep. £2 2s.

JANUARY 21.

Cheltenham B.C.—B. & Water E. (Materials)

JANUARY 23.

†***Beds C.C.**—Heating and hot water at North Beds College of Further Education. County A., Shire Hall, Bedford.

Portsmouth T.C.—City Treas. (Materials).

JANUARY 25.

Battersea B.C.—T.C. (Materials).

Lambeth B.C.—B.E. (Materials).

JANUARY 26.

Staines U.D.C.—E. & S. (Materials).

Stamford T.C.—B.E. & S. (Materials).

JANUARY 28.

Lichfield T.C.—City E. & S. (Materials).

JANUARY 30.

Bucks C.C.—County S. (Materials).

Frinton and Walton U.D.C.—E. & S. (Materials).

JANUARY 31.

Bedford T.C.—B.E. & S. (Materials).

***Merton and Morden U.D.C.**—External painting and repairs at Garth-rd. Dept. E. & S., Morden Hall, S.W.19.

FEBRUARY 1.

Bournemouth C.B.—B.E. (Materials).

Southwark B.C.—T.C. (Materials).

FEBRUARY 2.

Leeds T.C.—Highways E. (Materials).

FEBRUARY 3.

Bromley T.C.—B.E. (Materials).

FEBRUARY 4.

Dorset C.C.—County S. (Materials).

Dover T.C.—B.E. (Materials).

East Grinstead U.D.C.—S. (Materials).

Orpington U.D.C.—E. & S. (Materials).

Prestwich B.C.—B.E. (Materials).

Rainford U.D.C.—S. (Materials).

FEBRUARY 6.

Ilford T.C.—B.E. & S. (Materials).

Rhondda U.D.C.—E. & S. (Materials).

FEBRUARY 13.

Eastbourne C.B.—B.E. (Materials).

Kearsley U.D.C.—E. & S. (Materials).

FEBRUARY 18.

Ashford (Kent).—U.D.C.—S. (Materials).

Prestwich T.C.—B.E. & S. (Materials).

FEBRUARY 25.

Halifax C.B.—B.E. (Materials).

FEBRUARY 28.

Coventry T.C.—City E. & S. (Materials).

ROADS, SEWERAGE AND WATER WORKS

JANUARY 16.

***Lincoln (Lindsey) C.C.**—Site works, etc., for police buildings and magistrates' court, Scunthorpe. C. B. Pearson & Son (F.), architects, 18, Dalton-sq., Lancaster.

JANUARY 24.

Barnes T.C.—Surface dressing of roads. B.E. & S.

JANUARY 31.

***Barton-upon-Humber U.D.C.**—Road and sewer works at Tofts-rd. estate. C., Council Offices. Dep. £3 3s.

†**Hatfield R.D.C.**—Sewerage and sewage disposal works. D. Balfour & Sons, 131, Victoria-st., S.W.1. Dep. £5.

Uxbridge U.D.C.—Footways and road surfacing at Glebe-ave. estate, Ickenham. E. & S., 265, High-st. Dep. £2 2s.

FEBRUARY 8.

Stratford-on-Avon R.D.C.—8,247 lin. yds. of 5 in., 4 in. and 3 in. dia. water mains, etc., mass concrete reservoir, etc. Willcox, Raikes & Marshall, 33, Gt. Charles-st., Birmingham. Dep. £5 5s.

GENERAL BUILDING WORK

(LONDON)

Acton.—DWELLINGS.—B.C. propose to erect 47 dwellings on Ruislip-gdns. estate at est. cost of £59,100. Plans by council's architects' dept.

Camberwell.—CONCERT HALL.—B.C. has approved proposal of Public Relations and Entertainments Comm. to build a concert hall in borough "as soon as circumstances permit." No architect has yet been appointed.

Dagenham.—FLATS.—Evans Bros., Ltd., builders, 98, Dagenham-rd., Romford, are to submit plans to B.C. for 54 flats proposed on site in Dagenham-rd.

Deptford.—DWELLINGS.—L.C.C. has approved revised layout for proposed dwellings, New Cross-rd./Goodwood-rd. site. Architects are H. V. Ashley & Winton Newman, FF.R.I.B.A., 3, Verulam-bldgs., Gray's Inn, W.C.1.

Fetter-lane.—NEWSPAPER BUILDINGS.—Hulton Press, Ltd., are to develop a site on the east side of Fetter-la. as London headquarters. Their architect is Mr. W. H. Williams,

L.R.I.B.A., 7, Connaught-pl., Hyde Park, W.1. For the present, excavation work is going on and hutted offices are to be built, for which a contract has been placed with Messrs. E. A. Roome & Co., Ltd., 7, Unswick-rd., E.9.

Hackney.—DWELLINGS.—L.C.C. has approved B.C. proposals for 12 dwellings as extension to Greenwood-rd. housing scheme. Plans by Norman and Dawbarn, F.R.I.B.A., 5, Gower-st., W.C.1.

Harold Wood.—HOUSES.—Plans submitted by West & Evans, Ltd., builders, 103, Suttons-la., Hornchurch, for 16 houses, The Ridgeway, have been approved by U.D.C.

Hornchurch.—HOUSES.—A. J. Cooper, builder, 120, Cecil-ave., Hornchurch, has submitted plans for 14 houses, Southend Arterial-rd.

Hornchurch. — WORKSHOP, ETC. — Parrish (Builders), Ltd., Billet-la., Hornchurch, are to build a workshop and store, Amery-gdns.

Lewisham. — HOSPITAL REBUILDING. — Rees Phillips, F.R.I.B.A., 9, Bentinck-st., W.1, is architect for proposed rebuilding of Lewisham Hospital, including new X-ray, casualty, operating and physiotherapy depts. and administration offices. First part of scheme will be an out-patients' dept, to cost £81,000.

Southgate.—SITE FOR COLLEGE.—Middlesex C.C. propose to acquire land at Mayfield-ave. for erection of county college.

Southgate.—HOUSES.—B.C. propose to build 6 houses in Reservoir-rd. between Fairway and Addison-ave. at cost of £8,929. Plans by council's architects' dept.

Upminster.—HOUSES.—G. B. Derrick, builder, Warwick River-dr., Upminster, has submitted plans for 4 houses, 9-15, Ruskin-ave.

Woolwich.—DWELLINGS.—Housing Comm. have approved plan prepared by Boro' E. for further development of Coldharbour estate by the erection of 116 dwellings.

Woolwich.—DWELLINGS.—Housing Comm. have approved layout prepared by Boro' E. for developing the frontage to Mottingham-rd. north of Kingsley Wood-dr. by the erection of 36 dwellings.

(PROVINCIAL)

Ashton-in-Makerfield. — U.D.C. approved amended layout for 313 houses, Landgate-la. site.

Ashton-under-Lyne.—B.C. approved plans for: New factory, John-st., for Carr Clegg & Sons; alterations to Crowthorne Hotel, Crowthorne-rd., for John Smiths (Tadcaster), Brewery, Ltd.; workshop, Oxford-st., for Townsend & Smalley; Boro' S. to prepare plans for 150 houses, 15 shops and 85 aged persons' bungalows and three-storey flats.

Barrow-in-Furness.—Approved plans for extensions to Rosedale County Mod. School.

Bedlington.—U.D.C. to build 41 more houses. Plans by surveyor, W. Hall, Council offices, Bedlington, Northumberland.

Brighton.—T.C. to spend £23,000 on repairs to Royal Pavilion.

Brixworth.—R.D.C. to erect 60 houses in 1950. Surveyor, F. A. Russell.

Canterbury.—City A. is preparing plans for a temporary building which has been approved by Minister of Health in connection with Festival of Britain. Estimated cost, £18,000.

Chester.—E.C. consent given to R.C. Authorities to enter into contract for new sec. mod. sch., at £112,000; approved preliminary plans for Lache Community Centre; received M.E. approval for new infants' sch., Blacon. City S., C. Greenwood.

Chester-le-Street.—R.D.C. is to build 200 houses. Architect, M. Wilson, surveyor, Council offices, Chester-le-Street, Co. Durham.

Coalville, Leicester.—M.H. has approved scheme for 80 houses.

Cockermouth.—North-Eastern Housing Association, Ltd., Newcastle-on-Tyne, are to erect 40 houses for U.D.C.

Consett.—Licence has been issued amounting to £35,000 for proposed factory premises for I. & R. Morley, Ltd., glove manufacturers, at present operating at Consett. Premises will be built under ægis of North-Eastern Trading Estates, Ltd., Low Fell, Gateshead.

Coventry.—Hospital Management Com. propose adapting "The Towers," Kenilworth, as orthopædic hospital.

Cumberland.—Six staff houses proposed at Garlands Mental Hospital. Architects, Graham & Key, Paternoster-row, Carlisle.

Derbyshire.—E.C. school building programme for 1950 to cost £442,000. County A., F. H. Crossley, St. Mary's Gate, Derby.

Dewsbury.—T.C. propose school nursery, Flatts district.

Douglas, I.o.M.—B.C. approved development of remainder of Willaston estate, by erection of 346 houses.

Filey.—U.D.C. to invite tenders shortly for 20 houses. Plans by Council's architect, F. Vaux.

Gosforth (Northumberland). — Newcastle Breweries, Ltd., Haymarket, Newcastle-on-Tyne, are planning licensed premises, Riddell-ter. The firm's staff architect is Capt. F. T. Blumberg. Tasker & Child, Trinity-bldgs., New Bridge-st., Newcastle-on-Tyne, are architects for proposed factory alterations, Rectory-dr., for Tyneside Direct Supply Co., Ltd. It is proposed to provide a covered car park with café over at Royalty Cinema, High-st., to plans by Marshall & Tweedy, Grainger House, 36, Blackett-st., Newcastle-on-Tyne. Maurice Gatoff, Trafalgar-st., Newcastle-on-Tyne, is architect for proposed synagogue, hall and classrooms in High-st., for Gosforth & Kenton Hebrew congregation. U.D.C. is to make compulsory purchase order for 3,760 sq. yd. of land in Graham Park-rd. for flats.

Heaton (Newcastle).—C. A. Parsons & Co., Ltd., are to build new workshops and offices at between £300,000 and £400,000. Plans by J. Wharrier, Staff Architect.

Hebburn-on-Tyne.—M.O.E. has suggested to Durham C.C. that work should begin soon on erection of new mid-Tyne technical college at Hebburn. County A., G. R. Clayton, Court-la., Durham.

Hereford.—T.C. seek loan of £124,160 for flats, Holme Lacy-rd. Surveyor, W. M. Shimmin.

Hoylake.—U.D.C. propose 52 houses, Blackthorne Hill, West Kirby. Surveyor, B. F. Holden.

Isle of Thanet.—Factory, occupying from 50,000 to 60,000 sq. ft., with a possibility of extensions, is to be built at Westwood, for Messrs. Klinger Manufacturing Co.

Jarrow-on-Tyne.—Durham C.C. is negotiating for 8¼ acres south of Leam-la. for proposed county school. G. R. Clayton, Court-la., Durham, County A. Tenders are being obtained by T.C. for 84 flats, Albion-st., to plans by H. W. T. Perkins, Boro' E., Town Hall, Grange-rd., Jarrow. T.C. received M.H. sanction to build 94 houses, South Leam-la. estate, at £117,447. Site plans have been submitted to T.C. by Craven Dairies, Ltd., South Shields, for a dairy, Leam-la. The firm's architect is Mr. Anderson, Denton-av., Newcastle-on-Tyne. Jarrow & Hebburn Co-op. Society, Ltd., Albert-rd., Jarrow, are also planning a large dairy in same area to plans by C.W.S. Architects' Dept., 90, Westmorland-rd., Newcastle-on-Tyne. Boro' E. is to prepare plans for single persons' flats, Alfred-st. area.

Leeds.—E.C. to adapt premises at Quarry Hill as day nursery.

Leicester.—Housing Comm. approved in principle scheme for 370 flats on New Parks estate.

Lichfield.—T.C. propose further 120 houses. Plans by L. Straw, City E.

Liverpool.—Licence for £70,000 granted for restoration of Mossley Hill Parish Church.

Longbenton.—U.D.C. has been allocated 155 houses for 1950. Surveyor, A. E. Sweetman, Council Offices, Forest Hall, Newcastle-on-Tyne.

Macclesfield.—District hospital management comm. propose improvements to various hospitals during next three months, at £8,000.

Manchester.—T.C. approved erection of nursery school, Pilkington-rd., off Charlestown-rd., Blackley, for E.C.; 77 houses and 24 cottage flats (scheme 89), Woodhouse Park and Moss Nook neighbourhood; housing maintenance depot, off Thornton-st., Collyhurst; sewage pumping station, Orton-rd., Wythenshawe; conversion of "Moorbank," 2, Willow-bank, Wilmslow-rd., Fallowfield, into home for aged; 24 shops, 24 flats and 24 garages, Greenbrow-rd., Newall Green, Baguley; use of land, Nuthurst-rd., Moston, two sites at proposed Blackley neighbourhood unit and one site, Charlestown neighbourhood unit for erection of residential hostels; additional classrooms, St. John's R.C. School, Chorlton-cum-Hardy; seek M.H. approval for permanent health centre, Hall-la., Baguley. City A., L. A. Howitt, Town Hall.

Middlesbrough.—Northern Gas Board are to build showrooms, Albert-rd., to plans by Kitching & Co., 21, Albert-rd., Middlesbrough. No contracts have been let. Garbutt, Archibald & Archibald, 23, Albert-rd., Middlesborough, are architects for reconstructing nurses' home, St. Luke's Hospital, Marton-rd., and new out-patients' department at North Ormesby Hospital, Westbourne-gr., and additions to North Riding Infirmary, for Newcastle-on-Tyne Regional Hospital Board. Needham & Thorpe, Thirsk, are architects for alterations, Newport-rd., to provide three shops, office, four flats, meeting hall and stores, for Mr. G. B. A. Cooper, M.P. Owners of Middlesbrough Estate, Ltd., Queen-sq., Middlesbrough, are planning six houses and shops, Longlands-rd., Middlesbrough. Plans have been prepared by Kitching & Co., 21, Albert-rd., Middlesbrough, for alterations to Westgarth Social and Athletic Club, Southfields-rd., and alterations to Raglan Hotel, Station-st., for James Eadie, Ltd. T. A. Crawford, Borough-rd., Middlesbrough, is architect for a workshop, North-rd., for H. Pooley & Sons, Ltd. Garbutt, Archibald & Archibald, 23, Albert-rd., Middlesbrough, has prepared plans for 10 houses, Malvern-dr., for Duncanson & Son, builders, Beechwood Acklam, Middlesbrough.

Monmouth.—Monmouth R.D.C. Housing Comm. approved plans for 10 houses, Rockfield site.

Newcastle (Staffs).—Sydenham House, Parkter., is to be converted into residential flats for King's College, Newcastle. Plans by Fielden & Wharpe, King's College.

Northampton.—R.D.C. propose six houses at Pardley, Hastings, Billing, Brafield, Bugbrooke and Cogenhoe; 10, Nether Heyford; four, Rislingbury; six, Quinton; 12 Reade; and 10, Wootton. Surveyor, R. J. Miller.

Northumberland. — Revised sketch plans have been prepared by County A., Newcastle-on-Tyne, for a primary school, Earsdon.

Northumberland.—C.C. propose a health centre at North Seaton Colliery. Architect, W. W. Tasker, County A., County Hall, Newcastle.

Nuneaton.—Trustees approved plans for a Full Gospel Church at Marlborough-rd., Queen's-rd. and Richmond-rd. junction, at £20,000.

Padiham.—U.D.C. propose 12 houses, Slade-la. estate.

Richmond (Yorks).—T.C. to build 30 houses this year.

Sevenoaks Area.—Local planning comm. propose restoring Otford Palace.

Shardlow.—R.D.C. propose 206 houses to be sited as follows:—Breaston, 32; Ohellaston, 14; Littleover, 56; Ockbrook, 40; Sandiacre, 18; Spondon, 40; Stanley Common, 6.

Shipley.—John Robson (Shipley), Ltd., Alexandra Works, propose extensions to foundry, Ives-st.

South Shields.—Corporation is to build 525 houses in 1950. Plans by Boro' E., J. Reid.

Startforth (Yorks).—R.D.C. has been allocated 25 houses for this year.

Staveley.—U.D.C. propose 32 houses and 40 flats in 1950.

Stretford.—B.C. seek permission to rebuild portions of King-st. library; approved extensions to Brunswick-st. Employment Exchange, for M.W.; printing works, 336-340, Chester-rd., for J. Galt & Co., Ltd.; showroom and office, rear of Talbot Hotel, Chester-rd., for J. Bates; impregnating building, machine shop extension and extension to wheelwrights workshop, Westinghouse-rd., for Metropolitan Vickers Electrical Co., Ltd.; turnstiles house and maintenance stores, Warwick-rd. North, for Manchester Dry Docks Co., Ltd.; kitchen and dining-room, Girls' High School, Gorse-la., for Lancs C.C.; county A., G. Noel Hill, F.R.I.B.A.; offices, printing room and lavatories, Warwick-rd., for Lancashire County & Manchester Cricket Club; extension to printing works, Street-rd., Chorlton-st., for Jesse Broad & Co., Ltd.; civic restaurant, Northumberland-rd., for B.C.; extension to workshops, Elsinore-rd., for Robert Carlyle & Co., Ltd.; police and transport offices and lavatories, and extension of platers shed and offices, Trafford Wharf-rd., for Manchester Dry Docks Co. Ltd.; Boro' E., A. H. Perry, to submit proposals for demolition of old and costruction of new baths, Old Trafford.

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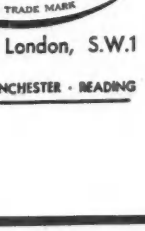

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Tewkesbury.—T.C. propose 44 Cornish unit houses, Priors Park estate.

Tottington.—Hargreaves & Jennings, Ltd., propose extensions to works.

Towcester.—R.D.C. propose 14 houses, Old Stratford, 26 at Pattishall and 14 at Towcester. Surveyor, G. Berridge.

Tynemouth.—T.C. has been allocated 430 houses for this year. Plans will be prepared by Boro' E., 19, Howard-st., North Shields.

Upholland.—U.D.C. propose 24 houses, Highgate estate and eight on Newgate estate. Surveyor, L. G. Curlett.

Wakefield.—West Riding C.C. propose offices and canteen, Westfield-rd.

Wakefield.—T.C. approved erection of kitchen at Almhouse-la., at £6,500; adaptation of "Brantwood," as aged persons' home; B.C. approved plans for:—Extensions to works, Thornhill-st., for West Yorkshire Printing Co., Ltd.; plans by J. P. Firth, 16, Woodthorpe-rd., Sandal; extensions to offices, Denby Dale-rd., for Y. Electricity Board; bakery, Smyth-rd., for Wakefield Industrial Co-op. Society, Ltd.; plans by Simpson & Moxon, Southgate-chbrs.; galvanising shed and extensions to cleaning mill, for Spencer Wire Co., Ltd., Thornes Wire Mills; extensions to railway wagon repair shop, Calder Vale Chemical Works, for Brotherton & Co., Ltd.; offices and buildings, Tadman-st., New Wells, for H. Hainsworth (Wakefield), Ltd.

Warrington.—B.C. received approval from M.E. to final plans for Long-la. Primary school, at £123,240. Boro' S., J. Y. Hughes.

West Riding.—E.C. propose improvements to schools; Eastwood Modern (£6,684); Highfield (£5,176); and Holycroft Modern (£7,873).

West Riding.—West Riding Standing Joint Comm. approved four-year building programme to cost £652,000, of court houses, police stations, etc., including Div. H.Q. at Court House, Bradford-rd., Otley (£90,000).

Whitby.—U.D.C.'s housing programme this year will include 40 houses.

Wigan.—E.C. approved preliminary plans for sec. tech. sch., Bull Hey, at £170,000; also college for further education. Boro' E., D. M. McKellan.

Worsley.—U.D.C. to let contracts for a further 199 houses in March and 164 in June. Surveyor, L. T. Broome.

TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H.M. Government Departments*.

Alton.—Three pairs of aged persons' bungalows at Froyle housing site, for R.D.C. A. J. Porter, B.Sc., A.M.I.C.E.:—
Mylward & Son (Alton), Ltd., Holybourne, Alton, Hants £6,078
A. W. & A. C. Jeffery, Medstead, Alton, Hants 5,575
*Rippin & Co., Ltd., Wrecclesham, Surrey 5,280

Bakewell.—Four houses at Tideswell, for R.D.C.: *Mr. Frank Hill, £5,772.

Barnard Castle.—Erection of 36 houses at Cockfield, for R.D.C.: *R. C. Williamson (Contractors), Ltd., Rowlands Gill, Co. Durham, £48,736.

Barnsley.—Alterations to pathological laboratory, etc., at Queen's-rd., for Hospital Management Committee: *J. Stothard & Sons, Albert-st., Cudworth, £5,771.

Barrow-in-Furness.—New school at Ormsgill, for E.C.: Direct Labour, £121,439.

Bath.—Houses for City Council. 14 dwellings at Weston: *E. Mortimer & Sons, £15,927 (in lieu of tender previously accepted); 22 dwellings at Tiverton: *R. Best & Son, Ltd., £27,815.

Birmingham.—Houses for T.C.: *Crossley Bros. (Builders), Ltd., 111, Albert-rd., £13,906 (12); Asphalte & Public Works, Ltd., Norwich Union-chbrs., Congreve-st., £92,380 (80); *H. Smith, 178, Bristol-rd., Birmingham, £38,531 (33); *Hales & Co., 2, Water Horton-rd., Castle Bromwich, £27,337 (32); *Wates, Ltd., London, £197,390 (184); *Smith (Bidford), Ltd., Bidford-on-Avon, £165,920 (136); *Hawksley, Ltd., Birmingham, £54,789 (42).

Bradford.—Adaptation of Usher-st. school, as school for Food Technology: *Whitefield & Lund, Bradford, £8,663.

Coleraine.—16 houses at Millburn estate, for R.C.: *J. Kennedy & Co., Ltd., Coleraine, £20,185.

Croydon.—Science and Arts Block, Ingram Secondary school, Ingram-rd., Thornton Heath, for C.B. Hugh Macintosh & Partners, 33 and 35, High-st., Croydon: *W. T. Yeates & Co., Ltd., 26, Cranleigh-parade, Sanderstead, £20,349 13s. 8d.

Darlington.—Alterations and additions to Salters-la. Open-air school, for T.C. E. A. Tornbohm, Boro' Architect: †Bussey & Armstrong, Brinkburn-rd., Darlington.

Darwen.—24 flats at Bolton-rd., for T.C. John E. Beardshaw & Partner, chartered architects, 11, Peter-st., Manchester 2: *Andertons, Builders & Contractors, Wharf-rd., Bolton, Lancs, £29,000.

Durham.—Provision of children's unit at Dryburn Hospital, for Newcastle-on-Tyne Regional Hospital Board, Osborne-rd., Newcastle-on-Tyne: *E. Gilderoy, Durham.

Galway.—Erection of modern hospital with accommodation for 462 beds in Galway town, for the Galway County Council: *A. A. Scott & Sons, Glasgow, £1,000,000 (approx.).

Glasgow.—School buildings at Acredyce-rd. John MacNab, architect, 129, Bath-st., Glasgow, W.C.2:—Underbuilding work, Gilbert Ash, Ltd., £9,442; superstructure works, The Bristol Areoplane Co. (Housing), Ltd., £11,940.

Hexham.—Conversion of Hexham Hydro into domestic science college, for Northumberland C.C. W. W. Tasker, County Architect, County Hall, Newcastle-on-Tyne: *George Bainbridge, 205, Westgate-rd., Newcastle-on-Tyne, £43,536.

Kidsgrove.—Extension of Town Hall, for T.C. E. & S., Town Hall: *H. Grant & Sons, Newcastle, £8,697.

Llangennech.—Extensions to junior school, for C.C.: *H. Thomas & Co., Ltd., Pottery-rd., Sawmills, Llanelly.

London.—Stores and extensions at Gilbert-rd., S.W.20. Architects, Jarvis & Richards. *Baileys Builders and Contractors, Ltd.

London (Air Ministry).—Contracts to value of £500 or over for period ended December 31:—
Heating and H.W.S. Installation: Dodd Engineering Co., Ltd., Manchester 15; Brightside Foundry & Engineering Co., Ltd., Sheffield. *Painting Work*: Reid Bros., Carlisle; Spraycraft Co., Ltd., Bromley, Kent; Baxter Bros. (Newcastle), Ltd., Newcastle-on-Tyne; T. & G. Saxton, Mansfield Woodhouse, Notts; Beeson Bros. (Decorators), Ltd., Grimsby; Industrial & Decorative Arts Co., Ltd., Mansfield, Notts; J. Hood, Caldicot, Mon; Alexander Thomson & Rolland, Dunfermline; James Garvey & Co., Belfast; Decorative Painting Contractors, Hounslow. *Building Work*: Geo. Wimpey & Co., Ltd., London, W.6; Sorrell (York), Ltd., York; E. S. Moss, Ltd., London, N.W.4; W. Peeke-Vout & Son, Ltd., Watton, Norfolk; Jas. McMullan & Co., Ltd., Lisburn, N. Ireland; Y. J. Lovell & Son, Ltd., Gerrards Cross, Bucks; J. M. Jones & Sons (Bldrs.), Ltd., Maidenhead; Thos. Lowe & Sons, Ltd., London, W.6. *General Maintenance Work*: Lewis & Watters, Leamington Spa; W. B. F. T. Archer, Handsworth, Birmingham; R. S. Hayes (Pembroke Dock), Ltd., Pembroke Dock. *Civil Engineering Work*: Scottish Aviation, Ltd., Prestwick Airport, Ayrshire; W. Lawrence & Son, Ltd., Swaffham, Norfolk; Kerridge (Cambridge), Ltd., Cambridge.

London (Air Ministry).—Contracts to value of £500 or over for week ended January 7.
Building work: G. and J. Seddon, Ltd., Little Hulton, near Bolton, Lancs. *Planting of trees, etc.*: Wm. Barron & Son, Ltd., Derby. *Painting work*: Clark & Fenn, Ltd., London, S.W.4; W. J. Wood Building Renovators, Ltd., Manchester, 4; Jas. Tomkinson & Co., Ltd., Liverpool, 5; Fields, Ltd., Reading.

¶London (M.O.W.).—Contracts placed by M.O.W. for week ended December 24:—
London: Welbeck T.E., N.W.1, Internal and external painting, F. Troy & Co., Ltd., 131, Great Suffolk-st., S.E.1; P.O. Training School, Clifton House, Euston-rd., N.W., Repairs and alterations, Goddard & Phillips, Ltd., 118a, Highgate-rd., N.W.5; Ministry of Civil Aviation, Woburn-pl., W.C.1, Internal painting, C. & T. Painters, Ltd., Mordaunt-pl., Harlesden, N.W.10; Royal Mint, Silver Melting House, Dressing accommodation, George Barker, 48-50, New-rd., Whitechapel, E.1; Seaford House, 37, Belgrave-sq., External repairs and decorations, F. Troy & Co., Ltd., 131, Great Suffolk-st., S.E.1. *Cambridgeshire*: H.P.O., Cambridge, Internal and external decorations, Kerridge (Cambridge), Ltd., Sturton-st., Cambridge. *Cornwall*: Lostwithiel, Erection of council school, Vallance, Metters & Bowden, Bigmeadow-la., Liskeard. *East Lothian (Scotland)*: East Fortune Airfield, East Lothian, Demolition and reinstatement of dispersed sites, Chas. Brand (Dundee), Ltd., 2, Union-st., Dundee. *Essex*: Romford Section Stock Extension, Erection, E. Scott Hale, Ltd., Globe-rd., Romford. *Hampshire*: Farnborough, Hants, Erection of A.R.L. blister hangar & security fencing, Lavender McMillan, Ltd., 54, Cheam Common-rd., Worcester Park, Surrey. *Hertfordshire*: Garston Research Station, Erection of heavy test laboratory, Haymills (Construction), Ltd., Hanger Green, Western-av., W.5; School for Polish children, Shephalbury House, Stevenage, Adaptations, Francis Newton, 94, Tilehouse-st., Hitchin. *Kent*: Head Post Office and telephone exchange, Chatham, Alterations, F. Parham, Ltd., Eva-rd., Gillingham. *Lincolnshire*: T.O.B. for Ministry of Agriculture and Fisheries, W.A.E.C. Offices, Sleaford, Alterations and additions, Wallhead Bros., Ruskington. *Morayshire (Scotland)*: Forres Academy, Erection of temporary classrooms, John Crow & Sons, 3, Coates-pl., Edinburgh; Grantown-on-Spey Grammar School, Erection of temporary school classrooms, John Crow & Sons, 3, Coates-pl., Edinburgh. *Perthshire*: Blairgowrie Secondary School, Erection of temporary classroom, Bett Bros., Cox-st., Downfield, Dundee. *Staffordshire*: M.O.W. general purposes exhibition, Stoke-on-Trent, Construction, dismantling, etc., David Esdaile & Co., Ltd., 30, Stannary-st., Kennington, S.E.11. *West Lothian (Scotland)*: Ministry of Food, Gideon-st., Bathgate, Erection of offices, John Crow & Sons, 3, Coates-pl., Edinburgh. *Worcestershire*: Ministry of Agriculture and Fisheries, Honeybourne, Decorations and repairs, Rexford (Builders), Ltd., Newborough-rd., Shirley, Birmingham.

¶London (M.O.W.).—Contracts placed by M.O.W. for week ended December 31:—
London: New Government Offices, Whitehall, Additional boiler-house equipment, La Mont Steam Generators, Ltd., 83-87, Crawford-st., London, W.1; Kidbrooke, Additional work at Kidbrooke Park-rd. cable depot, Kent & Sussex Contractors, Ltd., 109, Station-rd., Sidcup, Kent. *Hampshire*: Liss, Hants, Erection of automatic telephone exchange, Hoad & Taylor, Market-sq., Horsham; Farnborough, Hants, Cabling & electrical services at the generator test house, The London Electricity Board, 16, Stratford-pl., London, W.1. *Kent*: P.O., Kearnsey, Dover, Erection of telephone exchange at Kearnsey, Dover, R. J. Barwick, Market-st., Dover; Tonbridge Area, Kent (various sites), Removal of temporary defence works, Demolition & Construction Co., Ltd., 3, St. James'-sq., London, S.W.1. *Midlothian (Scotland)*: M.N.I., Piercehill-grove, Edinburgh, Midlothian, Additions and alterations, John Crow & Sons, 3, Coates-pl., Edinburgh. *Perthshire*: Crieff Public School, Perthshire, Erection of temporary school classrooms, P. Graham & Sons, Main-st., Bankfoot, Perth. *Surrey*: Wotton & Abinger Common & Leith Hill, nr. Dorking, Surrey, Removal of temporary defence works, Walter Smith (Public Works), Ltd., Bullinch-la., Riverhead, nr. Sevenoaks. *Sussex*: Polegate Area, Sussex (various sites), Removal of temporary defence works, Hall & Co., Ltd., 16, Chapel-rd., Worthing Sussex. *Warwickshire*: Rugby, Erection of grain silo, Lavender McMillan, Ltd., 54, Cheam Common-rd., Worcester Park. *Worcestershire*: Stourport-on-Severn, Erection of grain silo, Thomas Vale & Sons, Ltd., Stourport-on-Severn.

¶London (War Dept.).—Works contracts placed by War Dept. for week ended December 31:—
Kent: Miscellaneous work, H. Goodsell, Maidstone. *London*: Miscellaneous work, Liddelow, Ltd., Wembley. *Somerset*: Building work, W. Burston & Son, Clevedon. *Hampshire*: Building work, G. Wimpey & Co., Ltd., Hammersmith. *Salop*: Hutting work, M. A. Boswell (Contractors), Ltd., Wolverhampton.

Manchester.—Works for T.C. Two classrooms at Beaver-rd. County Primary school: *W. Fearnley & Sons (Salford), Ltd., Salford. Pavior, Davies Bros., Ltd.; Plasterer, J. Ferguson & Co., Ltd.; Plumber, J. Turton & Sons, Ltd.; Painter, H. S. Hollinshead. (All of Manchester.) Two classrooms at (a) St. Dunstons R.C. School, Moston; (b) St. Edwards and St. Kentigerns R.C. School. (a) and (b): *G. Fisher (Fallowfield), Ltd., Wilmslow-rd., Fallowfield, Manchester.

Matlock.—Works for U.D.C. 14 aged persons' bungalows at Darley Dale: *Isaac Groves & Sons, Ltd., Sheffield, £14,669; four houses at Cromford: *D. Gration, Wingfield Park.

Newbury. — Winchcombe County Primary schools, for Berks C.C.: *Francis Bros. (Builders), Ltd., Tilehurst, Reading, £111,083.

Norfolk.—Erection of Thorpe new junior and infant's' school for C.C. G. W. Oak (A.), A.M.T.P.I., Education Architect, County Education Office, Stracey-rd., Norwich.
D. Leighton & Son, Ltd., Lowestoft ... £103,764
W. Llewellyn & Son, Ltd., Norwich ... 102,474
Burrell Bros., Norwich 102,301

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*H. C. Greengrass & Sons, Ltd., Norwich	99,988

Norfolk.—Erection of Costessey new junior school for C.C. G. W. Oak (A.), A.M.T.P.I., Education Architect, County Education Office, Stracey-rd., Norwich.

Comben & Wakeling, Ltd., Halesworth	£67,738
T. Gill & Son, Norwich	64,660
W. Llewellyn & Sons, Norwich	64,394
H. C. Greengrass & Sons, Norwich ...	64,217
Burrell Bros., Norwich	64,079
W. Tickner & Son, Ltd., Sprowston ...	63,650
*H. G. Lomax, Hellesdon	62,331

*Tender accepted.

Northumberland.—Erection of three new schools, for C.C. W. W. Tasker, County Architect, County Hall, Newcastle-on-Tyne. Longbenton County Modern schools for 450 boys and 450 girls: *A. Anderson (Contractors), Ltd., Stanmore-rd., Newcastle-on-Tyne, £334,750. Bebside, Blyth County Primary school for 560 pupils: *H. E. Pitt, Ltd., Millfield, Sunderland, £119,286: Monkseaton Langley-av. County Primary school for 560 pupils: *H. D. Burton, Ltd., King-st., North Shields, £127,063.

Rawtenstall.—30 houses at Carr-la., estate and 19 at Staghills estate, for T.C. J. A. Whyte, B.E. & S.: *Ashworth & Hobson, Lee Brook, Rawtenstall; *H. Tuckett & Son, Ltd., Turton Hallow, Crawshawbooth; *G. Clayton & Sons, Ltd., Burnley-rd. Stone Yard, Waterfoot; *H. S. Hargreaves, 7, Elizabeth-st., Whitewell Bottom; *W. J. Penney, 1, Carr-la., Waterfoot.

Retford.—92 houses at Hallcroft, for T.C.: *Walter Firth, Ltd., Armthorpe, nr. Doncaster, £118,206.

Runcorn.—Houses for U.D.C. 80 at Greenlands estate: *Wm. Thornton & Sons, Ltd., 38, Wellington-rd., Liverpool, £102,742; six at Saxon-rd.: *W. Peak, 17, Church-st., Warrington, £9,711.

South Shields.—Erection of 24 terrace houses in Laygate-st., for T.C. John Reid, Boro' E.: *Tarslag, Ltd., Bowesfield-la., Stockton-on-Tees, £24,957.

Stockport.—Single-storey addition at Stockport High School, for E.C.: *G. Fisher (Fallowfield), Ltd., Manchester, £4,771.

Tynemouth.—Erection of (a) 36 houses on the Marden central area; and (b) 36 houses on the Marden southern site, for the T.C. (a): *Tynemouth Master Builders' Association; (b) *T. H. Rigby, Tynemouth.

Wakefield.—Eight houses at Eastmoor estate extension, for T.C.: *J. J. Dickinson, 35, Church-la., Methley.

Winchester.—18 houses at New Stanmore estate, for T.C. P. H. Warwick, L.R.I.B.A. Quantities by A. S. Wilson & Partners, 8, Princes-st., Storey's-gate, Westminster, S.W.1: *Brazier & Son, Ltd., 303-305, Portswood-rd., Southampton, £25,989.

Worthing.—Three blocks of four flats and four pairs of houses at Irene-av., Lancing, for R.D.C. Contract No. 3: *R. Vinall (Henfield), Ltd., Henfield, Sussex. (Subject to M.H. approval.)

Worthing.—22 houses at Irene-av., for R.D.C. Contract No. 1: *Grafton Estates Co., Crossst., Worthing. Contract No. 2: *Beamish (Builders), Ltd., 123, Gardner-rd., Portslade. (Subject to M.H. approval.)

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